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SURGICAL TUBERCULOSIS.*

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Since Koch's announcement of the discovery of the bacillus tuberculosis, in March, 1882, the medical press has devoted more time to the discussion of this subject in all its details than has been given to any other theory in medicine promulgated in recent years; and, certainly, no discovery in the province of medical science in modern times has surpassed it in clinical and pathological value, or provoked such general and acrimonious discussion.

But while the theory of the bacillus tuberculosis has not been accepted by some very able men in the profession, the fact of the existence of this micro-organism and of its importance as an etiological factor in one of the most common and most fatal diseases, has been demonstrated, and is now generally recognized.

It is, however, not my purpose to discuss the efforts made to controvert Koch's theory, but rather to examine briefly the present status of the question, and then to pass on to a brief consideration of the tubercular diseases in which the surgeon is especially interested.

Until comparatively recent years tuberculosis was considered exclusively a local disease of the lungs; the term *tuberculosis*

was as definite in its designation of a disease as the term Pott's disease. But since we now know that nearly every organ or tissue of the body may become the field of action of this virus, the term tuberculosis no longer locates the disease, but indicates only an idea of the histological topography of the lesion, *i. e.*, a nodule with certain definite elements and having a given life-history.

Although the discovery of Koch was at first turned to advantage, chiefly in the diagnosis of lung diseases, thus restricting its value principally to the field of medicine, yet surgery has not failed to benefit by it in a most important degree. The recognition of the surgical value of this discovery has been a matter of slow growth, and the profession to-day, outside of Germany, is by no means a unit on this question.

While Koenig, in Germany, asserts that the surgeon there considers almost every chronic inflammation a tubercular disease, yet one widely read work on diseases of the joints, by an American author, published since 1883, does not mention the subject of tuberculosis, but the author contents himself with the use of the vague terms "strumous and scrofulous" joints. The same may be said of a similar work published in London as late as 1886, to which I may have occasion to refer again.

I shall endeavor to give here only a brief

*An Inaugural Thesis.

résumé of the arguments which, in my opinion, render the mycotic origin of the tubercle an established fact in medicine, and in doing this, time and space will permit only a statement of propositions which have been satisfactorily demonstrated:

1. *Is the tubercle infectious?*

Koch has pointed out that Klencke was the first investigator who successfully inoculated animals with human tuberculosis in 1843. Villemin, in 1866, next took up the subject, and not only affirmed the proposition of Klencke, but proved also the converse to be true.

He first attracted general attention to the subject by a series of successful inoculations with tubercular virus, producing in *every case genuine tuberculosis*, and he fortified his conclusions by accompanying these inoculations with another series of carefully conducted control-experiments with non-tubercular material *without producing tuberculosis in a single instance*.

Koch, Cohnheim, and others, supplemented these investigations by numerous experiments, with perfect safeguards against error, and *invariably* produced the disease with *tubercular virus* and *never with any other*. Immediately upon the publication of the results of these experiments, opposition began to develop. Among the most prominent critics may be named Burdon Sanderson, Wilson Fox, and others of note.

They attacked the question negatively, and by numerous experiments sought to vitiate the conclusions of these investigators by showing that tuberculosis could be produced by other than tubercular material.

They succeeded for a time in raising a doubt as to the accuracy of the foregoing conclusions, but when their methods of experimenting became known it was evident that they had failed to surround their work with the necessary safeguards against error; that their work was practically unreliable and without value, and Koch's conclusions stand to-day in no immediate danger of contradiction.

We may therefore accept it as established:

I. That tuberculosis is infectious and can be propagated through a *series* of animals by inoculations, and that no matter how remote the inoculation, the disease retains its identity and infectious character; and,

II. That the disease *cannot* be produced by inoculation, inhalation, or by any other method with any other material, organic or inorganic.

2. *What is the infectious element?*

When Koch had been convinced of the truth of these propositions he set to work to discover, if possible, the particular element in the tubercle which is the cause of infection. The native histological elements of the tubercle were then, as now, well understood, and since all of them occur in ordinary granulation-tissue, identical in every particular except that of arrangement, and yet when taken from such tissue are perfectly innocuous, he was forced to the conclusion that the infectious property of the tubercle lay in some element not yet discovered—perhaps some specific poison of a parasitic nature foreign to the body.

A full description of Koch's work in this line of thought is not essential here, and I will state only the points which he sought to establish.

They are as follows:

I. To determine whether in tubercular tissues elements occur foreign to the tissues and not produced by them.

II. Having found such elements, to prove, if possible, that they are living organisms having differentiating characteristics and capable of indefinite multiplication.

III. To show that tissues containing such organisms, when used for inoculation would produce the disease and that no other tissues would do so.

IV. Whether, by cultivating this organism in suitable soil until a *perfectly pure* culture had been obtained, he could pro-

duce the disease with such culture by inoculation.

V. To show by control-experiments that inoculation by any other substance not containing such an organism *never does* produce the disease.

All this he successfully accomplished with marvelous accuracy, and by experiments extending over hundreds of cases and with uniform results.

This organism, having distinct characteristics and capable of ready differentiation from all other forms of schizomycetes, Koch calls the "*Bacillus tuberculosis*," and in it resides the efficient etiological factor of tuberculosis. Without entering into further detail we will assume as demonstrated the two propositions pertaining to the etiology of the tubercle and its infectious character. If we now keep in view the well-known histological elements of the tubercle, together with the propositions just stated, we will be able to define a tubercle as a cellular, non-vascular nodule containing the *bacillus tuberculosis*, and varying but little in its histological elements and life-history.

As a basis of some remarks on the surgical treatment of tuberculosis, we may consider briefly a few facts in the pathology of the tubercle. Since the *bacillus tuberculosis* is the irritant or cause of this disease, and is constantly escaping from tubercular tissues and floating freely in the air, why is it that we do not all become infected? Why do the few alone suffer? Obviously the most rational explanation lies in the varying susceptibility of different individuals, and of different tissues in the same individual. Therefore, in addition to the presence of the specific irritant there must be also a specific susceptibility—that is, a suitable soil and favorable conditions of temperature, rest, and moisture.

The *bacillus tuberculosis* gains access to the body by means of the air or food, and having lodged, the soil being suitable, the germ proceeds to multiply in loco. The presence of the germ in the tissues or

the products which it evolves is a mild chronic irritant and causes corresponding inflammation. The products of inflammation gather around the focus of irritation and take the special structural arrangement which is readily recognized under the microscope, and which is so well understood that it needs no description here. This structure has, however, a special tendency to necrosis, the one usually affecting albumenoid structures, namely fatty degeneration terminating in caseation. This degeneration is as characteristic of the tubercle as any element which it contains; it is an invariable factor in its history.

The bacilli are carried, probably by the leucocytes, into contiguous parts, and a series of secondary foci spring up around the primary focus, passing through similar stages toward necrosis, and from proximity blend with the primary focus; thus the disease spreads by means of progressive local infection. There may thus result the destruction of a part or the whole of an organ, and the disease still be a local one. But at any moment the bacilli may find their way into the lymph-channels and through them into the blood, or they may enter more directly by penetrating the vessel walls; and when this occurs the disease is no longer local, but every part of the body becomes liable to its destructive influences and we have a general disease, acute miliary tuberculosis.

This brief pathological history should be of interest to the surgeon for the following reasons:

1. The disease is infectious.
2. It spreads from a single focus to adjoining parts, and entering the blood becomes a general disease terminating in death. It is malignant in the sense that it is metastatic. It may not be as fatal as cancer when not interfered with, but the record of cases where the primary focus when fully developed has become encapsuled, calcified, or otherwise mysteriously disappeared, is so small that this element may be practically eliminated from con-

sideration in making our prognosis of the case, or in determining on a mode of procedure in its treatment. The case may be stated dogmatically as follows: Given a primary tubercular focus within the field of surgical operations, it is the surgeon's imperative duty to eradicate it before general infection occurs and a fatal result is inevitable. Perhaps all surgeons of the present day are willing to subscribe to this principle, but undoubtedly there exists a great diversity of opinion as to the etiology and pathology of many surgical diseases that are unmistakably tubercular.

While tubercular lesions of various tissues of the body besides the lung were early recognized by Delpech, Nichet, Nelaton, and others, their knowledge was based wholly upon the histological elements of the tubercle. Since the discovery of Koch, however, Volkmann, Friedländer, Koenig, and others, have used the microscope so energetically and so efficiently on a great variety of lesions, and have found the bacillus tuberculosis invariably in certain classes of diseases, that they are now quite generally considered as being always of tubercular origin.

I have already adverted to the prevalence of this opinion in Germany, but in a work entitled "Diseases of the Joints," by Howard Marsh, of London, published in 1886, no reference is made to tubercular disease of the joints, although the author devotes considerable space to the consideration of "Scrofulous Diseases of the Joints," and of "Strumous Joints." He gives, however, as "complications" of these affections, unless early and successfully treated, phthisis, tubercular meningitis, etc. Thus it would seem that while the profession is practically a unit as to the treatment of tubercular lesions, when recognized, there appears to be want of recognized pathognomonic signs of such lesions when they occur.

As long as the terms "strumous joint" and "scrofulous disease" are retained, there will probably continue to be confusion and

error in diagnosis, for they represent only a condition, not a disease.

If what has been said be true, then it is of vital importance in these cases that early and correct diagnosis be made; and in proportion as the surgeon depends upon the microscope in diagnosis will scrofula disappear from the list of pathological lesions, and application of the term become restricted to designation of a condition of the system—a constitutional diathesis which predisposes to tubercular disease. The correctness of this definition of scrofula has been demonstrated by conclusive investigations. The term should be used only to designate a depraved constitution of low vitality, one especially susceptible to tubercular infection.

M. Rendu states the case as follows: "Scrofula and tuberculosis bear the same relation to each other as soil to seed." If chronic inflammation occur in such an individual it seems safe to conclude that it is tuberculosis.

Regarding tuberculosis occurring within the province of surgery, time will not permit anything like a complete review of the history, pathology, diagnosis, and treatment of these diseases, and necessarily consideration of that phase of the subject must be general rather than special, and under the following divisions:

I. Diagnosis.

II. Treatment.

III. Enumeration of surgical tuberculosis.

I. Diagnosis.

a. Presumptive.

b. Positive.

By presumptive diagnosis is meant diagnosis based upon the history of the case, together with its physical characteristics, and the general condition of the patient. By positive diagnosis is meant that based upon the microscope, upon inoculations, or both. What degree of probability or positiveness may attach to presumptive diagnosis, as defined above?

Although positive diagnosis of a tuber-

cular lesion must necessarily be based upon microscopic examination or inoculation-experiments, with due safeguards against error, yet the constancy with which the disease appears in certain organs or tissues, under certain well-defined conditions, and manifesting itself with more or less constant characteristics, gives to such a presumptive diagnosis a degree of probability which makes it differ from a positive diagnosis by less than any assignable quantity. Thus tubercular hip-disease, Pott's disease, necrosis of bone with rarefaction, occurring in the so-called scrofulous individuals, are always regarded as being tubercular in origin. But the same can not be said of all tubercular lesions, and the microscope is frequently the only reliable means of diagnosis. The importance of early diagnosis in these cases leaves no room for doubt as to the duty of the surgeon in regard to the use of the microscope in all forms of chronic suppurative inflammation.

Negative results in its use in unskilled hands do not imply that positive results are not possible in the hands of those more expert in the use of the instrument. The microscope of a magnifying power of, at least, from 300 to 500 diameters is recommended; Koch advises 500 to 700 diameters, with an Abby condenser for thick sections. The sections must have a special staining, and the process known as Ehrlich's modification of Koch's method is, perhaps, the most accurate and convenient. This method of making a diagnosis may seem long and troublesome, but it does not consume much time where all conveniences are at hand.

Nowhere is the bacillus tuberculosis found in such large numbers as in the lungs. The sputum of a tubercular patient usually contains the bacilli in sufficient numbers to enable the microscopist to detect them with comparative ease. It is not so, however, in tubercular lesions of other parts of the body. Frequently but a single bacillus can be found in such a section,

and it is often necessary to examine a large number of slides before the germ can be detected. Koch, at one time, examined forty sections from a lupus before he found the germ.

II. Treatment.

Of the treatment, in general, but little need be said. From the nature of the disease it must be radical and early in order to be efficient. The indications are—

1. Medical, to attempt to build up the system and fortify the tissues against further invasion.

2. Surgical, to eradicate the focus as early as possible.

These indications become self-evident from the infectious and metastatic character of the disease, *i. e.*, it is fatal without early and adequate treatment.

It is not to be inferred that every case of tuberculosis can be cured by operative measures. Sometimes the disease, like carcinoma, recurs. This is readily explained upon one of two hypotheses—either the focus removed was not the primary focus, but a secondary or metastatic lesion, and the primary focus still remains as a source from which secondary lesions continue to develop; or, if the primary focus was operated upon, it was not completely eradicated and it continues to spread. Indeed, Koenig has estimated that of all tubercular diseases of bones and joints, 79 per centum are secondary lesions. Nevertheless, when the disease manifests itself in such a way that its diagnosis becomes positive, surgical interference is the only rational treatment, and it alone can hold out hope of permanent recovery of the patient.

III. Enumeration of surgical tuberculosis.

Only some of the more important of these lesions will be considered here.

a. Tuberculosis of bones.

That this tissue is especially liable to tubercular infection, has been demonstrated. So constantly is the bacillus tuberculosis found in *ostitis rarefaciens* that many

surgeons consider caries of bone as being always tubercular in character. This is perhaps a radical position to assume, but I believe that it results in less harm to patients than the extremely conservative position of denying the frequent occurrence of tuberculosis, and putting patients on an expectant plan of treatment.

Caries of bone is well defined by Boyd as an erosion of bone by tubercular inflammation, syphilis being almost the only other cause. Traumatism may be a secondary cause; its mode of operation will be referred to later. Caries attacks spongy bones far more often than compact ones, the vertebræ being by far the most commonly affected, as in the condition known as Pott's disease.

Chronic suppuration is nearly always connected with this form of bone-disease, and is, to some extent, characteristic. Often it is profuse, seeking the surface in the line of least resistance. The chief danger lies in exhaustion, septicæmia, or acute tuberculosis. These lesions occur most frequently in children, and notably in those possessing the so-called scrofulous constitution.

The treatment has already been indicated. The general condition must first receive attention; then, if possible, the tubercular focus should be thoroughly eradicated by surgical means. In the case of Pott's disease, radical operations, of course, are impossible, but much can be done by change of climate and constitutional treatment. Dr. Edmund Andrews has had excellent results by dissolving out the carious bone with dilute hydrochloric acid of such strength as the patient can bear. His mode of treatment, together with the results of numerous and careful experiments with various bone-solvents, are fully explained in a paper read before the American Medical Association, June, 1887.

b. *Tuberculosis of Joints.*

This is a frequent disease, especially among children.

Recently pathologists have come to view joint-disease as primarily tubercular, and that traumatism, while it may be an exciting or secondary cause, is seldom, if ever, the primary etiological factor. The manner in which the joint becomes infected is of interest.

Tuberculosis of a joint is usually a secondary lesion, the primary focus being, perhaps, a neighboring caseous gland, or the source of infection may be located in the cancellous tissue of the proximal end of one of the bones forming the joint. A knee-joint may be primarily attacked by tuberculosis without any other focus; but it has been shown that a primary source of tubercular arthritis of the knee has been a focus situated in the cancellous tissue of the lower epiphysis of the femur, the caseous products of this focus having found their way into the joint with resulting infection. When a joint, situated near such primary foci, suffers from traumatism, there is set up a current of lymph and blood in the direction of the injured joint; there is determination of fluids to this part; hyperæmia, and the caseous *débris* of such a tubercular lymph-gland, together with the contained bacilli, is swept along with the current into the joint and the result is tuberculosis following traumatism. If the injury be a compound fracture, infection may come from the atmosphere. The hip-joint is especially liable to disease of tubercular character and "disease of the hip-joint" usually means tuberculosis, although this joint like all others, is liable to inflammation having other origin. Outside of tuberculosis of the lungs, tuberculosis of the hip-joint is most unfavorable as regards prognosis; this is especially true if the disease go on to suppuration.

Of 401 cases of hip-joint disease reported from the Hospital for Hip-joint Diseases, London, in 69 per centum there was suppuration.

The Alexandrian Hospital, London, reports 260 cases of suppurative hip-joint diseases, of which 31.6 per centum proved

fatal, the cause of death being chiefly tuberculosis acute or local.

The rational treatment seems to be excision, and yet the mortality resulting from the operation has been very large, but improved methods of operating, greater skill, and better antisepsis, in the future may materially reduce this high death-rate.

It may be stated in conclusion that all bones and all joints of the body are liable to infection, for, under diseased conditions, the bacillus tuberculosis has been found in most of them.

c. Other tuberculosis.

Some of the tissues and organs of the body which have been the seat of tuberculosis, and in which the bacillus tuberculosis has been demonstrated, are given as follows:

Abcess, pre-sternal and costal, by Debove; Abcess, cold, by Schuckhart and Krause; Bladder, by Wesener; Epiglottis, by Voltolini; Epididymis, by Brouilly; Fallopian tubes, by Koch; Fungoid ostitis of rib, by Brouilly; Genito-urinary tract, male and female, by Koster; Glans penis, by Koch; Intestines, by Koch; Kidney, by Gondolphe; Lymphadenomata, by Schüppel; Lymphatics, cervical, by Guarneri; Lupus, by Friedländer and Koch; Larynx, by Koster; Mucous membrane ulcers, by Volkmann; Mouth, by Volkmann; Mammary cysts, by Friedländer; Os uteri, by Friedländer; Osteo-myelitis, by Kanzler; Ovary, by Koch; Ozena scrof., by Volkmann; Pharynx, by Voltolini; Rectal fistula, by Voltolini; Skin, by Friedländer; Supra-renal capsules, by Koch; Tongue, by Koster; Tonsils, by Guttmann; Tendon-sheaths, by Koenig; Testicles, by Schuckhart and Krause; Uterus, by Koze and Simon; Urethra, by Koch; Velum palati, by Guttmann; Vagina and vulva, by Wesener.

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HÆMATURIA SIMPLEX IN A NEW-BORN CHILD.

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In the early part of January of the current year a child five days old came under my observation, suffering from hæmaturia. The child was small and extremely delicate, one of twins born after a tedious but not specially difficult labor. The first urine passed after birth contained a small quantity of blood; the next was much darker and stained the napkins like nearly pure blood. This continued until the fifth day, when I saw the child. The portions of the napkins stained with urine were of a uniform reddish-brown color, somewhat stiffened, but there was no evidence of clotting. Portions that were stained were cut

out and macerated in water. The resulting fluid contained a large number of red blood corpuscles and some phosphates, but no crystals of uric acid or oxalate of lime. The fluid was markedly alkaline, but this might have been due to soap contained in the fabric. At no time was there any evidence of pain when the urine was passed. Temperature was normal, appetite good, bowels regular. No tenderness over hypogastric or lumbar region. On the evening of the fifth day a mild icterus developed. The skin was faintly yellow, the conjunctivæ were not colored, nor was there any evidence of inflammation about the umbilicus. The icteric attack faded on the second day, and was not associated with any disturbance of the general health. When the child was six days old the urine became clearer, and on the seventh day was free from blood. Since that time the child has continued perfectly well; it has grown stronger, and now presents the appearance of a healthy, well-nourished babe of three months.

So far as the literature of this subject is accessible to me, I have been able to find but little reference to the condition except the relation in which the symptom stands to cancer of the kidneys. This matter was carefully considered by A. Leibert (*Jahrb. f. Khkde.*, 1884), who publishes a case of his own, two from Dr. Jacobi's practice, and gives a résumé of forty-eight published cases of cancer of the kidney occurring in children under eleven years of age. He found that hæmaturia was relatively more frequent in cancer of the kidneys in children than in grown people. In two-thirds of the cases it was the first symptom of the disease.

An examination of a large number of works on diseases of children, only elicits the uniform statement that hæmaturia is most marked in purpura scarlatina, croup, pneumonia, chronic exanthemata and cancer, tuberculosis, and cheesy degeneration of the kidneys. The condition which I have ventured to term "hæmaturia simplex" is

nowhere referred to in any English work on diseases of children (with one exception), nor does it receive consideration in the ponderous German "handbook" (*Handbuch der Kinderheilkunde*). I do not, however, regard the symptom as a very rare one, though the literature of the subject is so meagre. A case is reported in the *Lancet* for 1880, the reference to which is not now accessible to me, and another is found in the work of Dr. Goodhart (*A Guide to the Diseases of Children*, by James Frederick Goodhart, edited by Louis Starr, M. D.). He says, after referring to hæmaturia in the graver conditions: "But besides all these, and more puzzling than they, children are brought to the out-patient room with a history of frequent passage of blood from the urine. Perhaps they are admitted, and the blood, present once or twice within the first few hours, disappears altogether, and does not reappear." The author then describes the case of a girl aged seven, who had suffered from hæmaturia for four months, not associated with pain or any disturbance of the general health, nor could the cause of the symptom be determined. When the patient was admitted the author remarked that "some of the features were those of vesical growth, but that it was a frequent hospital experience that children, with prolonged hæmaturia outside, speedily got well inside the hospital." Such proved to be the case with this little girl.

While this is the first case of hæmaturia in a young child that has ever come under my observation, yet, as I said before, I do not believe that the condition is very rare. The indications are to examine for any of the ordinary causes of hæmaturia, stone, renal or vesical, nephritis, or vesical growths. Unfortunately the malignant forms, cancer, tuberculosis, etc., can only be differentiated by time, but these later conditions are not to be inferred because the former are excluded.

I think, from what has already been said, that we are justified in adding the term "hæmaturia simplex" to the literature of

pædiatrics, and that with advantage, as the practitioner when confronted with the array of deadly diseases with which the symptom is associated in most of our standard text-books, will make a fatal prognosis which will not be verified by the subsequent history.

434 WEST ADAMS STREET.

ORIGINAL LECTURES.

A CLINICAL LECTURE.

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[Reported by William Whitford.]

POLIOMYELITIS ANTERIOR ACUTA.

This patient is 52 years of age. She says that she had two convulsions in quick succession last June. She tells us she had general malaise and a high fever before the convulsions came on, and after she recovered from the convulsions her left leg was partially paralyzed, and two weeks afterward her other leg became paralyzed. Her health previous to this trouble was good. She is married, but has never borne children. On examination of the limbs we find, with the *æsthesiometer*, that the tactile sense is normal. We find by the use of these two tubes, one containing hot and the other cold water, that she has normal condition of temperature-sense, and she seems to have also keen perception of pain.

Whatever the trouble is, it does not involve the sensory areas. Examination of the condition of the limbs as to temperature shows that they are colder to the sense of touch than they ought to be in a room of this temperature. Comparison of the temperature of the hands with that of the lower extremities shows that the temperature is considerably below normal.

There is paralysis of certain muscles in this case. She can not make certain movements. Examination of the limbs as to the condition of muscular tissue shows waste;

the calf-muscles have almost disappeared. She had large limbs at one time, but now they are small in comparison to what they ought to be in a person of her size.

There is no disturbance of sensation, but impairment of motion (paralysis), depressed temperature, and atrophy of the limbs.

Regarding the history of this patient, I would say that I saw her at the time she entered the woman's hospital. Then there was absolutely no power in the lower extremities. Since that time, by the use of electricity every day, using the galvanic current to a strength sufficient to produce muscular contractions, she has improved. She has also had massage daily, and was given internal specific treatment. There were certain things in connection with this case that pointed to syphilis as the cause of this disturbance in the spinal cord, and under this continued electrical treatment, together with massage and the internal administration of mercury, she has made a great deal of improvement.

The affection is an inflammation of the anterior horns of the cord—*poliomyelitis anterior acuta*—and the interesting feature about it is this: It has occurred in an adult. It is a disease of the spinal cord exceedingly uncommon in adults. It comes on suddenly, with first a severe chill and fever, followed by convulsions, then paralysis. There is nothing in the character of the chill, the fever, or the convulsions to lead one to suspect that the spinal cord is the seat of the disease. One can only locate it when the resultant phenomena—paralyses—have been found.

This form of inflammation of the spinal cord does not affect the bladder or the rectum. This patient has no discomfort about the chest or head. The disease is limited to the anterior horns of the cord in the lumbar enlargement. The territory involved in this pathological process is small. You see a striking difference in the symptomatology from the cases we showed you a week ago—two cases of locomotor ataxia, paralysis

agitans, and one of paraplegia. The striking symptoms of the disease under consideration are paralysis, wasting of the lower extremities, a low temperature of paralyzed limbs, and the absence of sensory disturbance. You see also vaso-motor disturbance manifested in both of these limbs; they are swollen, showing impairment in the circulation of the limbs. That comes from the vaso-motor disturbance that accompanies the disease and which accounts also for the depressed temperature of the limbs.

PSEUDO-HYPERTROPHIC PARALYSIS.

We have now to direct your attention to a little patient. She is five years of age, a bright, sprightly little girl, who has never walked. Notice the peculiar position of her body when she tries to stand or move forward. She tries to walk on her toes; she throws one foot in front of the other, and makes her progression on the toes. There is but little movement, and it is not made by bringing the foot down flat but by walking on the toes, throwing her head and chest away beyond the centre of gravity. She has some power of movement in the sitting posture, but it is much impaired. Touch-sense, temperature-sense, and pain-sense are normal.

There is one point to which I desire to call your attention in particular, and that is the condition of the thigh-muscles as compared with the calf-muscles. There is an enormous development of the calf-muscles. The tissues in the calf of the leg are hard and dense to the sense of touch. Notice the great overgrowth of tissue in the thigh. We have an overgrowth of the thigh-muscles, and just how much they are overgrown in comparison to what they ought to be as compared with the muscular structure generally, we cannot definitely determine. What calf-muscles she has are almost as hard as gristle. So far as the thigh-muscles are concerned they are hypertrophied, but it is not a hypertrophy with increased muscular power; there is loss of power; the tissues in her thighs and calves

cannot possibly be proper muscular tissue. It does not perform the functions of muscular tissue, and it has a degree of density to the touch that does not belong to normal muscular tissue. The hypertrophy can not be due to overgrowth of muscular structure. Some change has taken place in the proper structure of the muscles; it is, in short, pseudo-hypertrophy, making this a case of pseudo-hypertrophic paralysis. The disease in this, as in the other case, is located in the anterior horns of the cord. It differs from the other case. The patient with poliomyelitis anterior acuta, who was just before you, up to the time of her fever and convulsions, had no impairment of power of the lower limbs. The acute process in her case came on suddenly. The trouble of this child has been going on since its early history. When the disease commenced we do not know. The early history is defective. We have here a chronic process. The trophic centres that are concerned in producing atrophy or impairment of function not only produce atrophy of muscular tissue, but a growth of adipose tissue sometimes instead of muscular tissue proper. Why this should be has never been satisfactorily explained.

This child was before the class last winter, and has made some improvement since that time. She is receiving now, and has been during the year, the constant galvanic current as strong as could be borne—a current of sufficient strength to produce muscular contractions—together with cod-liver oil, small doses of strychnia, and massage, and with this line of treatment judiciously carried out she has improved. If the muscles will respond to a current that the patient can tolerate, there is hope of restoration, and the treatment should be persisted in for months, and even years, if necessary. Just as long as the muscles will respond to a galvanic current there is hope of improving their nutrition and of restoring their power. Occasionally such cases recover.

SCIATICA.

This patient is 45 years of age. She complains of pain in the left side. This pain she says begins in the small of the back and shoots down the left leg. When I press over the trochanter she complains of pain; when I press into the popliteal space she complains of pain; also when pressure is made over the head of the fibula. She complains also of pain on the inner side of the foot, over the internal malleolus. We will see if there is any difference in the size of the limbs. We will select two corresponding points on the right and the left legs. The left leg measures two inches less in circumference than the right. The pain is always worse at night. Notice the difference in the quality of this pain, and the location of it, as compared with the cases of locomotor ataxia that appeared before you a week ago. This pain is distributed more or less over the whole leg, following the course of the nerve-trunks; it is not localized. It has been followed by atrophy of the limb.

This is a case of sciatica. We will try to find out what the cause of it is. She is the mother of thirteen children, eight of whom are living, and has had five miscarriages. We elicit no history of rheumatism, and no history of syphilis. Her menstrual periods have been less profuse, and at longer intervals than formerly; she is approaching the menopause. Her urine was found on examination to be abnormally acid and loaded with uric acid and urates. The condition of the menses and urine furnishes a clue to the cause and suggests the line of treatment. The menstrual period is the period of purification; there is a large amount of waste material eliminated at this time, and when the function ceases there is more or less disturbance produced in the nervous system by the circulation in the blood of this excrementitious matter, and neuralgia is a common result of this retention. We will therefore prescribe for this patient mild alteratives, laxatives, and tonics, to promote the re-

moval and arrest the formation of these morbid products.

R:

Sodii salicylatis, drachms.....5
Sodii iodidi "2½
Syrupi rhei et potassii comp., oz...1
Aquæ Gaultheriæ, oz.....4
M. Sig.—One teaspoonful before each

meal, in water.

R:

Quiniæ bromidi, oz.....1½
Acidi arseniosi, gr.....1
Strychniæ sulphatis, gr... 1
Ext. aconitiæ, gr.....15
M. Ft. in capsulæ No. XXX.
Sig.—One after each meal.

The limb should be enveloped in cotton batting covered with oiled muslin or rubber cloth, first rubbing it with the following anodyne liniment:

R: Chloral hydrate.

Camphoræ.

Ol. cajuputi ana, one ounce.

M. Sig.—Use as a liniment.

Massage is an admirable adjunct to the treatment of sciatica.

The manner of giving massage in cases of this kind is to take the limb in both hands, press one's fingers deeply into the limb, if possible, against the sciatic nerve, and then by friction along the course of the nerve through the thigh and down to the calf of the leg, grasping the limb and pressing the fingers deep into the tissues. A great many cases of sciatica are due to a congested condition of the nerve, and that may be the result in this case. There are cases again in which there is inflammation of the nerve. You know the nerves are liberally supplied with blood vessels, and congestion of these blood vessels, at least, accounts for many cases of neuralgia. The use of the constant galvanic current, putting the negative pole over the spine and the positive over the tender points, permitting the current to pass four or five minutes through each painful point, greatly relieves such patients. Where the pain is violent, hypodermic injections of morphine may be used in some

instances, injecting the morphine as close as possible into the nerve-trunk. Opium will relieve some of these cases, but it is a bad practice to habitually use morphine or any preparation of opium for the relief of neuralgias or sciatica. It leads a great many of these people into morphine habits. Having had an attack of neuralgia, they are liable to another, and the use of morphine in nine cases out of ten will create the injurious habit—a habit worse than the effects of the disease.

579 WEST JACKSON STREET.

A CLINICAL LECTURE.

BY D. A. K. STEELE, M. D.,

Professor of Orthopedic Surgery in the College of Physicians and Surgeons.

[Reported by William Whitford.]

DOUBLE CONGENITAL OBLIQUE INGUINAL HERNIA—MAC EWAN'S OPERATION.

GENTLEMEN: The next patient we present to-day will be this little child, with the following history: He is now 18 months of age; his mother states that soon after his birth she noticed a swelling in the lower part of the abdomen, just over the inguinal canal, the swelling appearing on either side simultaneously. Soon afterwards—when the child was some three weeks of age—the swelling was noticed extending lower down; along the course of the inguinal canal she observed that it increased when the child made any violent exertion, such as coughing, crying, straining, or any exercise that brought into play the diaphragm or abdominal muscles. Some weeks later she took the child to a dispensary where a truss was adjusted, but the instrument did not prevent the re-appearance of the swelling in the scrotum. During the past year a number of trusses have been applied, but none of them prevented the recurrence of the hernial swelling.

Now, when a little patient is brought to us suffering from a tumor of the scrotum it

may mean one of a variety of diseases, and it is well for us to make a diagnosis by exclusion. Let us enumerate some of the various tumors that may occupy the scrotal pouch. We may in this locality have a tumor that may be either a hernia, hydrocele, orchitis, epididymitis, hæmatocele, varicocele, œdema, or a complication of two or more of these affections. How shall we differentiate these varied conditions? What will aid us in a correct diagnosis in a given case? For diagnostic or clinical purposes tumors of the scrotum may be divided into two general classes, to-wit: reducible and irreducible—reducible tumors including all herniæ (except strangulated), varicocele, and congenital hydroceles. Irreducible tumors of the scrotum include all tumors connected with the testicles, all hydroceles (except congenital), and strangulated hernia. Tumors of the tegumentary surface of the scrotum, such as inflammatory œdema, elephantiasis, and epithelioma, are usually so characteristic in their history as to offer no special impediments to a correct diagnosis.

Scrotal hernia may be mistaken for (1) hydrocele of tunica vaginalis, cord, or encysted hydrocele; (2) sarcocoele of the testicle, simple, tuberculous, cystic, or malignant; (3) varicocele; (4) hæmatocele; (5) bubo or an undescended testis.

In scrotal hernia, as a rule, the tumor is soft and doughy to the touch, light weight, smooth and regular, painless unless inflamed or strangulated, of sudden advent from above downwards; resonant on percussion, fills the inguinal canal; has cough impulse, gurgles, is of normal color, opaque; may exist on either side; the spermatic cord is concealed; does not fluctuate; aspiration is negative; bowels may be embarrassed. It can be reduced unless the hernia is strangulated or incarcerated.

In hydrocele of the testicle the tumor is ovoid or pyriform, develops slowly from below upwards; is firm, tense, and elastic; fluctuates, is translucent, dull on percussion is irreducible; spermatic cord is

neither concealed or displaced; the inguinal canal is empty; bowels unaffected; aspiration reveals fluid.

In congenital hydrocele the fluid disappears completely within the peritoneal cavity by compression of the tumor for a short time.

In sarcocoele of the testicle the tumor is usually hard and resistant, heavy, often nodular and irregular; painful; grows slowly; dull or flat on percussion. The inguinal canal is empty; no impulse on coughing; bowels unaffected; irreducible; no auscultatory sounds. Simple sarcocoele is chronic orchitis. Both the epididymis and body of the gland are affected. The cord is usually thickened. Abscess of the organ may occur. It is caused usually by injury followed by inflammatory deposits.

Tubercular sarcocoele is met with most frequently in early manhood, and may occur in any constitution; in the strong and robust as well as the weak and cachectic; and although often associated with tuberculosis of other organs, it is common enough to find the tuberculous nidus in the epididymis, not as a sequence of gonorrhœal inflammation or some slight injury followed by inflammatory infiltration, as was formerly believed, but as a coincident. The progress is slow and insidious. The gland at first moderately enlarges with little or no pain, the hypertrophy being especially marked in the *globus major*. Presently the outline of the tumor becomes craggy or nodulated, and circles around the testicle from behind forwards in the form of a crescent. After several months, this adventitious tissue exceeds in size the testicle proper, and then it begins to soften at points and one or more abscesses burst and discharge a thin shreddy pus. The vas deferens is greatly enlarged.

In syphilitic sarcocoele or gummata the history of the patient guides us in the diagnosis. Also, we find that the body of the gland is usually the seat of the infiltration which takes place in the connective tissue between the tubuli seminiferi, the epididy-

mis undergoing little, if any, enlargement. The cord and vas deferens are unaffected. There is little or no tenderness, and the peculiar sensation elicited by squeezing a healthy testicle is absent. The tunica albuginea is very greatly thickened. Hydrocele is a frequent complication, and tapping is often required to establish a diagnosis.

Cystic tumors of the testis closely resemble hydrocele, and differ chiefly in being opaque instead of translucent. Aspiration should be practiced before pronouncing positively upon their character.

Cancer of the testicle primarily invades the body of the gland, and almost invariably assumes the encephaloid form. Most observers doubt the existence of other varieties of malignant disease in this organ. The development of the disease is rapid. The patient has a sensation of weight, pain and dragging in the testis; the scrotum becomes distended, reddish or purplish, and the superficial veins are enlarged. The skin adheres to the gland, ulceration occurs, fungus protrudes, the inguinal glands are secondarily involved, and the patient by this time presents the characteristic cancerous cachexia.

In varicocele the tumor is knotty and irregular, like a bag of worms, bluish in color; most frequent upon the left side; increases in size upon the application of heat; develops gradually; is dull on percussion; fluctuation doubtful; spermatic cord not affected; inguinal canal not involved. No cough-impulse. It reduces spontaneously by any position that favors increased venous return, but returns immediately when the patient stands up notwithstanding pressure at the ring. There is weight and dragging in the scrotum.

In hæmatocele the advent is sudden, usually traumatic in origin; grows from below up if spontaneous; fluctuates until coagulation occurs; is at first soft, and hard after coagula form. It is pyriform in shape; ecchymotic, irreducible, heavy, dull on percussion. The spermatic cord is unaffected, and the inguinal canal empty.

There is often pallor and prostration from loss of blood. The bowels are unaffected.

Bubo is seldom mistaken for a scrotal tumor, and it is unnecessary to name differential points.

An undescended testicle is painful, and pressure upon it yields a peculiar sickening sensation. It is found wanting upon the side occupied by the tumor, and the scrotum is imperfectly developed upon the same side. It is sometimes mistaken for bubonocoele.

Now, gentlemen, I trust the minute enumeration of diagnostic points mentioned in connection with these various scrotal tumors may not be considered tedious or unnecessary, and that a remembrance of them will aid you in making a correct diagnosis.

Let us refer to the points presented in the case of this little child. We have here a soft, elastic, compressible, reducible swelling, occupying both sides of the scrotal pouch; cough-impulse is present; gurgling is plainly felt. Upon flexing the thighs, elevating the hips, grasping the scrotum gently, by making moderate compression the tumor disappears within the abdominal cavity. Inversion of the bottom of the scrotum by the little finger enables us to readily follow the receding mass through the dilated inguinal canal and distended inguinal ring into the abdominal cavity. With the history presented, and with the result of this physical examination, we are readily enabled to make a diagnosis of *double congenital oblique inguinal hernia*. Now, inasmuch as persistent efforts during the past year have been made by able surgeons to retain this hernia *in situ* by various trusses without success, what plan of treatment shall we devise? The treatment of this affection, as you know, may be divided into *palliative* and *radical, or curative*. Palliative treatment consists in the use of such apparatus, instruments, or trusses, fitting over the inguinal ring as will prevent the extrusion of the hernial tumor—fitted with sufficient nicety and adaptation to the

contour of the parts as to inflict the minimum amount of pain, and yet with sufficient firmness to resist the intra-abdominal and intra-thoracic pressure induced by coughing, crying, straining during urination or defecation, or any exercise of the voluntary muscles that produce downward pressure upon the abdominal viscera. In a large proportion of cases a nicely adjusted truss, worn continuously during the first few months or year or two of infantile life, will suffice to effect a permanent occlusion of the distended inguinal ring, but occasionally we meet with cases, such as the one we have just examined, where a cure is impossible by means of any truss. Where it is impossible to retain the hernia within the abdomen, then it becomes necessary to resort to more radical measures—to a closure of the enlarged canal by means of a surgical operation. One of the best operations for this purpose is that devised by MacEwan, of Glasgow.

MacEwan's operation consists first in a thorough cleansing of the field of operation with soap and water, removing by means of turpentine all animal oil from the surface; the parts are then covered with a portion of lint, saturated with a bichloride solution. In the case of an adult the hair of the pubes and neighboring parts is closely shaven; the patient is then anaesthetized, the limb on the side of the swelling is flexed at the knee by a pillow just placed underneath. After having reduced the bowel, he makes an incision sufficient to expose the external abdominal ring. An exploration of the sac and its contents is then made, and the finger introduced through the canal examines abdominal aspects of the internal ring and the relative position of the epigastric artery. The operation may then be divided into two parts—the one relating to the establishment of a pad on the abdominal aspects of the internal ring; the other to the closure of the inguinal canal. The steps of the operation are as follows: He first frees and elevates the distal extremity of the sac, preserving

along with it any adipose tissue that may be adherent to it. When that is done, he pulls upon the sac, and, while maintaining tension upon it, introduces the index finger into the inguinal canal, separating the sac from the cord, and from the parietes of the canal; then inserts the index finger outside the sac till it reaches the internal ring, and there separates with its tip the peritoneum for about half an inch around the abdominal aspects of the circumference of the ring.

Next, the stitch is secured firmly to the distal extremity of the sac, the end free is then passed in a proximal direction several times through the sac, so that when pulled upon the sac becomes folded upon itself like a curtain. The free end of this stitch, threaded on a hernial needle, is made to traverse the canal and to penetrate the anterior abdominal wall about an inch above the internal ring, the wound in the skin being pulled upward so as to allow the point of the needle to project through the abdominal muscles without penetrating the skin. The needle that he uses is cork-screw-shape with an eye in the point, being made rights and lefts. The thread is relieved from the extremity of the needle, when the latter is withdrawn; the thread is pulled through the abdominal wall, and when traction is made upon the sac, wrinkling upon itself, it is thrown into a series of folds, its distal extremity being drawn farthest backwards and upwards. An assistant maintains traction upon the stitch until the introduction of the sutures into the inguinal canal, and when this is completed the end of the stitch is secured by introducing its free extremity several times through the superficial layers of the external oblique muscle. The pad of peritoneum is then placed upon the abdominal side of the internal opening, where, owing to the abdominal aspect of the circumference of the internal ring having been refreshed, new adhesions may form. The sac having been returned into the abdomen and secured to the abdominal circumference of

the ring, the inguinal canal is closed outside of it in the following manner: The finger is introduced into the canal and lies between the inner and lower borders of the internal ring, the threaded hernia needle, then introduced and guided by the index finger, is made to penetrate the conjoined tendon in two places—*first*, from without inwards, near the lower border of the conjoined tendon; *second*, from within outwards as high as possible on the inner aspects of the canal. This double penetration of the conjoined tendon is accomplished by a single screw-like turn of the needle, one single thread is then withdrawn from the point of the needle by the index finger, and when this is accomplished, the needle along with the other extremity of the thread is removed. The inner side of the conjoined tendon is therefore penetrated twice by the thread, and a loop left on its abdominal aspect. Second, the other hernia needle, threaded with that portion of the stitch which comes from the lower border of the conjoined tendon, guided by the index finger into the inguinal canal, is introduced from within outwards through Poupart's ligament and the aponeurotic structures of the *transversalis internal and external oblique muscles*; it penetrates these structures at a point on a level with the lower stitch in the conjoined tendon. The needle is then completely freed from the thread and withdrawn. The needle is now threaded with the gut, which protrudes from the upper border of the conjoined tendon, and introduced from within outwards through the transversalis internal and external oblique muscles on a level corresponding with the upper stitch in the conjoined tendon. It is then quite free from the thread and withdrawn. There are now two thread ends on the outer surface of the external oblique muscle, and these are connected with a loop on the abdominal aspect of the conjoined tendon. To complete the suture the two thread-ends are drawn together and tied in a reef knot; this unites firmly the internal ring. The same stitch may be repeated lower

down the canal, if thought desirable. In adults it is well to do so. The pillars of the external ring are likewise brought together, and in order to avoid compression of the cord it ought to be examined before tightening each stitch; it ought to be freely movable. It is advisable to introduce all the necessary sutures before tightening any of them. When this is done, they may be all drawn, tied, and maintained so, while the operator's finger is introduced into the canal to ascertain the result. If satisfactory, they are then tied, beginning with the one at the internal ring, and taking up the others in order.

During the operation the skin is retracted from side to side to bring the parts into view and to enable the stitches to be fixed subcutaneously. When the retraction is relieved the skin falls into its normal position, the wound being opposite the external ring. Operation is therefore partly subcutaneous. When the canal has been brought together a decalcified bone drainage-tube is placed with its one extremity next to the external ring, the other projecting beyond the lower border of the external wound. A few chromatic gut-sutures are then introduced along the line of skin incision. Iodoform is dusted over the wound; a small portion of sublimated gauze is applied, and on top a sublimated pad, held in position by an aseptic bandage. As the patient is laid in bed, a pillow is placed under his knees, while his shoulders are slightly raised so as to relax the tissues about the canal. Temperature is taken night and morning, at the same time dressings are inspected and left undisturbed from fourteen to twenty-one days, unless they are stained or the temperature is abnormally high. From four to six weeks after the operation patient is allowed to rise from bed, but is not permitted to work until the end of the eighth week; is further advised not to lift heavy weights until the end of the third month. Adults engaged in laborious occupations are advised to wear a bandage and pad as a pre-

cautionary measure; and in the majority of children the closure is so complete and firm that further treatment by pad is unnecessary.

In the case of this little child, who is now under the influence of an anæsthetic, we will have to modify this operation, inasmuch as we have to deal with a congenital hernia in which the loop of bowel and testicle occupy a common sac; there is no tunica vaginalis proper. We will first make the preliminary incision thus; separate the sac from its connections; then open it transversely about an inch and a half above its distal extremity, and form the lower part into a tunica vaginalis by closing it with fine running catgut suture. The upper part of the sac is pulled down as far as possible now, split behind longitudinally, a portion of it closed around the cord, which is carefully preserved, and that portion which is left is now dealt with as the sac of an acquired hernia; passing a stitch through its distal portion through and through, so that it becomes folded up as a curtain, then with the finger I separate the attachments around the circumference of the abdominal ring. We then pass a needle through the abdominal wall an inch above the ring, bringing the thread out, where it is held by an assistant; drawing upon this cord forms the intra-abdominal pad or boss that forms a firm buttress to resist the impulse of the wave of intra-abdominal pressure.

We now proceed to close the internal ring in the manner described, passing two or three sutures along the course of the canal, drawing them snugly together, yet not tight enough to strangulate the cord. A drainage-tube is now passed from the upper angle of the wound and brought down through a button-hole in the bottom of the scrotum so as to afford perfect drainage. Parts are now irrigated with a 1-3000 solution of bichloride, the wound closed with interrupted catgut sutures, dusted lightly with iodoform, and hermetically sealed with cotton and collodion so as to

prevent infection from the urine, which is liable to occur in a case of infants or young children. In closing up the wound in this way we reduce the risk of infection to a minimum. A heavy antiseptic dressing will now be applied, covered over with a starch bandage. The child will be kept as quiet as possible, small doses of camphorated tincture of opium administered from time to time, and the dressing will probably have to be changed every second day. The mother will be directed to keep the child lying on the left side as much as possible, so as to avoid soiling of the dressing during urination. The operation on the left side will be deferred until permanent healing of the right has taken place—say for two or three weeks.

A week later the child was presented to the class showing primary closure of the operation wound, except at the upper angle and the scrotal button-hole through which the drainage-tube emerged. Slight suppuration took place along the course of the drainage-tube. The highest temperature was 100.5° the day following the operation; the second day it dropped to $98\frac{1}{2}^{\circ}$, and remained normal subsequently, the child showing no symptoms or evidences of having undergone a serious or dangerous operation, the result so far being in every way eminently satisfactory.

1801 STATE STREET.

EDITORIAL.

THE MULTIPLICITY OF MEDICAL SOCIETIES.

When the American Medical Association was organized, forty years ago, the object of its originators was, undoubtedly, to fraternize the members of the profession in the United States by annual meetings, and to add to the general store of medical knowledge by a conference of the medical men of the whole country.

Why this worthy and desirable object has not been fully attained is evident. At the time of the organization of the asso-

ciation the undeveloped condition of the country, the great distances necessary to be traveled in order to attend its annual meetings, held at different points, made it difficult for many to be present.

Local societies were developed to accommodate those who could not attend the meetings of the association.

Then, about twenty years ago, the tendency to the formation of specialties was developed, and from that time has run into an extreme. Again, local societies were organized to furnish these specialists fields in which to discuss their theories. Thus, city, village, county, district, and State medical societies multiplied, until now the number is so great, the times and places of meeting so many, that it is difficult for one to remember even the names of such organizations. The number of such general societies of regular physicians, published in a recent medical and surgical directory of the United States (1886), is 648. To these must also be added more national societies of specialties.

These societies have, therefore, diverted many contributions of knowledge from their proper repository—the American Medical Association. From being a source of only good, they have interfered more or less with the object of the parent organization, through their tendency to separate too much the departments of medicine. The growing tendency of recent years to drifting apart—to isolation—on the part of specialists is not in their interest, and is to be deprecated for many reasons.

We recognize the advantage of the division of labor for those qualified for special work. The contributions to the science of medicine by the qualified workers has given prominence to specialists, and tempted younger, unqualified men to attempt special fields of labor, and to organize more special societies. Limited professional experience has led many to ignore the advantage of a broad, liberal education, and many have acknowledged that they know but little outside of their

special field, thus practically separating themselves from the profession. What began as an advantageous principle has been abused in many instances, and this tendency to isolation has been, in some respects, a detriment to the profession by the holding aloof of many able specialists from the American Medical Association, and thus interfering with her attempts to foster and cultivate these special fields, and materially diminishing the contributions from those fields of study that should reach the profession through that organization, which, more fully than any other, represents the whole profession of America.

Although mistakes have been made by the parent institution, as all will admit, it is evident to an unprejudiced observer that the desire is to adhere to its original object in its formation. The growth of the institution embarrasses it in carrying out the original plan; but its faults are not insuperable, and if those who have become alienated from it, and established or identified themselves with other organizations that seemingly are conflicting with its interests, were to manifest the same interest and zeal in promoting the welfare of the association, by attending its meetings and contributing to its scientific work, many of its mistakes would be corrected, and an identity of interest of the medical profession be maintained.

It is now recognized that our civil war was largely the outgrowth of the want of closer intercourse and better acquaintance between the different sections of the country. It is not impossible that the same factors have been active in producing some of the existing alienations from the American Medical Association. It is much to be desired that the next meeting of the association, at Cincinnati, this year, may show the existence of better feeling.

DANGERS FROM PROTRACTED INHALATION OF ETHER.

W. Gill Wylie, M. D., in the *Medical Record* of March 31, 1888, presented to

the profession a summary of a year's work in abdominal surgery. The record is brilliant; out of forty-one operations for the removal of the uterine appendages but one death occurred, and that was from acute interstitial nephritis. Of seventeen ovariectomies, one died from suppression of urine, on the fourth day. The autopsy revealed chronic and acute diffused nephritis, with cirrhosis of the liver. One case of supra-pubic hysterectomy died of exhaustion, while two laparotomies, one for extra-uterine pregnancy, and the other for septic pelvic abscess, resulted fatally.

From the foregoing it appears that in two of the cases death was caused by inflammation of the kidneys. Dr. Wylie attributes the death of one of the patients to prolonged use of ether in the operation. This emphasizes the known dangers of ether inhalation, particularly in prolonged operations, in persons suffering from chronic interstitial nephritis. For years ether has been considered in the United States the anæsthetic *par excellence* so far as safety is concerned. Those appalling accidents in which a patient dies on the operating table were comparatively infrequent, and the mortality of ether as compared with chloroform was roughly estimated at from one to fifteen. The *nexus* between kidney complications and the inhalation of ether has been too often overlooked, and yet the records show many fatalities, in which the findings at the post-mortem table are not different from those in Dr. Wylie's cases. It is possible that, could the records be made up completely, the mortality from ether and chloroform in prolonged operations would vary less.

The practical lesson is that we should *never*, in such cases, administer an anæsthetic without first carefully examining the heart and urine. The latter should be especially examined for traces of albumen; but of more importance than that is the estimation of the total solids excreted by the urine. Of course tube-casts, or other evidence of gross kidney lesion,

should at once contra-indicate the use of ether. The estimation of the quantity and solids of the urine furnishes the true index of the integrity of the renal structures and of their capacity to bear any added strain.

It may be argued that this is a troublesome and complicated procedure. But in these days when the mortality from surgical operations has reached such a diminishing point, the proverbial "one chance in a hundred" cannot afford to be missed by the enterprising surgeon.

Pneumonia is a sequela of ether-inhalation by no means infrequent, and one of those which readily escape estimation in tables illustrating the comparative safety of different anæsthetics.

CYANOSIS CAUSED BY ACETANILID

This condition, while not as frequent as the writings of Germain See would indicate, is yet sufficiently common for us always to warn our patients, that they may not be unnecessarily disturbed by such an alarming symptom.

The drug was recently prescribed by the writer for a lady living in an adjoining State. At first it caused no marked symptoms and relieved the headache for which it was given. One morning, however, after taking two powders, of five grains each, she noticed that her lips were purple; later, her ears, fingers, and face turned the same color. The lady was thrown into the utmost distress, and alarmed her friends. She had suffered from a mild attack of hemiplegia, and these untoward symptoms were looked upon as the sure precursors of death.

A physician recently related an amusing case, to the physician at least, occurring in his practice. He had attended a lady in confinement, the child dying a few days later from general cyanosis. Shortly afterward he prescribed acetanilid for the mother. The following night he was hastily summoned to her house and informed that she was dying from the same disease, which she had *caught* from her child.

This idiosyncrasy is certainly very variable. It is more frequent where large doses are given, but many persons are affected by a small quantity. Again, some patients take the drug for some time before cyanosis develops. The writer has given the drug for weeks, in one instance for five months, without the appearance of this symptom.

So far as our knowledge extends, the condition is free from danger, and does not contra-indicate the use of the drug where the patients do not object. The cyanosis promptly disappears after the withdrawal of the remedy.

SUITS FOR ALLEGED MALPRACTICE.

Numerous suits for alleged malpractice have recently been entered in this and other cities against some of its eminent surgeons. The defendants are generally known to be careful and conscientious surgeons. Attention is called to the charge made simply to emphasize what is known to all, that character, above reproach in every way, does not protect its possessor from malicious prosecution. If human nature were free from venality, the ingratitude which prompts such suits might be allowed to pass without special comment, but there are believed to be, unfortunately, members of another learned profession always willing to undertake such prosecutions as a speculation.

Suits for alleged malpractice are susceptible of a dual division. In one are included all those in which the plaintiff really thinks the defendant guilty of the charge, when in point of fact he is not; and the other includes those in which some venal attorney makes his fee contingent upon his success in securing a verdict for the plaintiff, and urgently advises the bringing of the action at law. A case was recently decided in the courts at Boston in a manner which is interesting in this connection. The case was tried four times.

At the opening of the last trial a motion was made by the defense, and granted by the court, that in case the jury decided in favor of the defendant the plaintiff must pay the costs for all four of the trials. The verdict was for the defendant. This is just, as far as it goes, but is not sufficient.

The plaintiff bringing any such suit ought not only to pay all costs of unsuccessful trials, but ought also to be compelled by the law to give a bond for an amount sufficient to indemnify the defendant in case of failure of the plaintiff to establish the claim made. If unsuccessful, he should be compelled at least to pay, in addition to the costs of the trial, the expense in which the suit involved the defendant. This matter is one of interest to all physicians, since, as the instances cited show, no physician or surgeon is certain of immunity from such prosecution, and while he is not hedged about by a divinity which should protect him from criminal neglect of his duty, he and all other men should be guarded, more securely than at present, against the annoyance, injury to reputation, and the expense of malicious prosecution.

THE SURGEON-GENERAL OF THE NAVY. —Surgeon-General Browne of the navy has entered upon the discharge of his official duties as the head of the medical corps of the navy. The appointment has given marked satisfaction, not only to that corps, but to the medical profession generally. As the director of the *Museum of Hygiene* of the navy, for several years, he did much to make it the great credit that it is to that branch of the service. In all his official relations, in his long career in the navy, the discharge of his duty has been such as to have entitled him to this marked distinction. He enjoys the honor of having been the surgeon of the famous *Kearsarge*, in the battle in which the *Alabama* was sunk off the coast of France.

The *Journal and Examiner* tenders to Surgeon-General Browne, who has been one of its corps of collaborators for several

years, its congratulations upon his well-merited advancement in his corps.

THE RUSH MONUMENT COMMITTEE of the American Medical Association will report progress at the next meeting of the association, at Cincinnati, on the 8th instant. We trust that that report will indicate that the medical profession of America is willing to honor the memory of one of the most illustrious members of the profession that America has produced. Other countries have not failed to perpetuate the memory of their illustrious physicians in this manner, but the omission, in this respect, on the part of America, that has been liberal in honoring others of her distinguished citizens, is the more conspicuous. The claims of Dr. Rush on all classes of citizens because of his great services, and their varied character, make it fitting that one who participated so prominently in the cause of our national independence, and who was an ornament to the medical profession, should be one of the first to be thus honored by those upon whom the honor of his life-record is reflected.

EXTRACTS AND ABSTRACTS. STUDIES ON THE ETIOLOGY OF CARCINOMA.

[Berliner Klinische Wochenschrift, No. 10]

[Translated by Dr. Lester Curtis.]

Our present time may be well called the etiological era of medicine. Following the movement in this direction there is a disposition to regard carcinoma as an infectious disease, in the sense that a pathological irritant is deposited in the tissues, which excites there histologically distinct characteristic carcinomatous growths.

The grounds for this opinion, which I have not found collected in the text-books and monographs, I may give briefly as follows:

In the first place, the spreading of the carcinomatous growth agrees throughout, tolerably exactly, with that of an inflamma-

tion. Both extend into the lymphatic vessels, and just as we know pyæmic metastases, in the same way are there carcinomatous metastases.

As a second reason, I might bring forward the quite rare cases of general miliary carcinoma, which run their course attended by fever, disturbances of the digestion and circulation, and show the greatest resemblance to miliary tuberculosis, so that the differential diagnosis is only to be made by the use of the microscope.

These cases can be explained, according to our general pathological knowledge, in no other way than by the view that the germs of the disease come into the blood in great numbers, and are deposited in different parts of the body at the same time. The difference which these multiple emboli present to us, from those embolic plugs which the fundamental work of Virchow and Conheim have made known, lies in this, that the surrounding tissue takes on a similar growth. When we consider that the carcinomatous metastases and the nodules in miliary carcinoma occur through an embolic deposition of the cancer germs, since it can scarcely occur otherwise, then the cancer germ, or cancer poison, must, of course, be smaller than the section of the lung capillary, since it must have passed through these capillaries.

As the last reason, may be mentioned tar, paraffine, and chimney-sweep's cancer, described principally by Von Volkmann, in a correct estimation of their etiological relations. These cancers, as is well known, develop occasionally in strong young mechanics, on places of the body where otherwise cancer is a rarity, namely, on the upper and lower extremities and on the scrotum, after a preceding chronic dermatitis. The skin affection heals when the laborers give up their injurious occupation, but in other cases becomes a chronic hyperplastic process, which often effects the whole body and develops sometimes an eruption like psoriasis, or even papillary excrescences. Sometimes the character of this skin in-

flammation changes and becomes of a decidedly malignant carcinomatous character.

We must, of necessity, grant that some sort of influence, standing in a certain relation to the tar and paraffine, reaches the place from without (whether a poison or a living form) so as to cause the benign inflammation to pass into a carcinomatous one, or, histologically expressed, in order that the hyperplastic process may be stirred up to an atypical destructive growth. We may not accept the view that this influence, this unknown agent, forms itself, as it were, first from within outwards in the chemically altered cells; on the contrary, this comes from without; in short, the agent depends upon an infection.

Other reasons which are usually alleged for the infectiousness of cancer appear not to be so demonstrable and clear.

I might, in addition, enumerate the seborrhagic skin carcinomas, the cancers occurring after the so-called "psoriasis buccalis" (Volkman-Schuschardt). Also, those carcinomas which arise, as it were, through contact. For instance, Von Bergmann presented briefly to the Berlin Medical Society the case of a man with a carcinoma of the upper lip, which had formed directly over one already existing on the under lip.

Cases also have been described (Israel and others) in which, for example, after a carcinoma of the tongue or of the buccal cavity, secondary nodules had grown in the digestive tract; and cases are reported in which, after tapping a carcinomatous peritonitis, the growth had followed along the line of puncture. And finally reference is made to carcinomas occurring after chronic ulcers of the leg, bone fistulas, tooth fistulas, burns, etc.

Though infection can not be denied in all these disturbances, still the cases are not absolutely demonstrative, for the disease could also have occurred in these places without preceding inflammation; it is also quite natural that in a vigorously growing carcinoma, the growth should follow in the

direction where the least mechanical resistance exists, *i. e.*, in the line of puncture.

Whether the above reasons justify the view of the infectiousness of carcinoma must be left to the judgment and convictions of each

But we can, on the foundation of histological and bacteriological studies, assert with tolerable certainty that the irritant of carcinoma can be no bacterium with the properties which we have become acquainted with in the bacteria. All the pathogenic bacteria known to us, planted on any part of the body, cause disturbance and processes of homoöplastic or homologous nature that is, disturbances and processes which are formed and kept up by growths and proliferations of the cells which are already in the place.

Tubercle, for instance, is nothing more than a collection of round cells and epithelioid cells, whose histogenesis has not been observed to be perfectly uniform.

Great actinomycotic tumors, also, looked at histologically, are essentially only rankly growing connective tissue and white blood corpuscles. Connective tissue, white blood corpuscles, and fixed cells exist everywhere in the body. These processes are, therefore, homoöplastic or homologous.

Up to this time we know no bacterium which can induce heteroplastic growths, *i. e.*, growths of such cells, or such typical compounds of cells as are not at all present in the infected spot concerned. But now, as is well known, the metastases of the carcinomas and their secondary nodules are mostly of the same histological epithelial structure as the primary cancer, even in the place where no epithelium is usually present. Every carcinoma of the mamma, for example, causes in the axillary glands the typical epithelial nests, although, no epithelium is present in the lymphatic glands.

In this connection, after a hard cancer (Horn-Krebs) of the skin, there resulted in the neighboring lymph glands, not only a typical carcinomatous epithelial growth,

but even the well-known corneus structure was present exactly as in the primary skin cancer.

This typical continued repetition of an epithelial growth in a place where no epithelium at all occurs, we cannot explain by a simple bacterium. If we suppose there is a micro-organism or a disease-irritant, to which we allow a certain relation to the cell, or, in the sense of our kariokinetic studies, to the cell nucleus or the divisions of the nucleus, so that the micro-organism together with the cell, or the infected cell, affords the first foundation for the further infection, the theory would much rather harmonize with the facts. We could very well imagine that the infected nucleus or division of a nucleus might easily pass the pulmonary capillaries and set up heteroplastic growths. In any case the mechanism of the etiology of carcinoma is much more complicated than many authors seem to imagine; and to-day it is much more difficult to explain fully the etiology of carcinoma than it was to make clear the etiology of tuberculosis at the time of Conheim and Salomonsen.

Up to this time, so far as I have been able to look over the literature, no investigator appears to have made a successful inoculation of a cancer from one animal to another, or from a man to an animal, or from one man to another, or upon the same individual.

The earlier investigations were all spoiled, since circumstances were not such as to avoid suppuration and pyæmia; accordingly that was looked at as general inoculated carcinoma, which was in reality a focus of embolic pyæmia.

The one case of Langenbeck, also, which would be gladly brought forward as one of successful inoculation, appears not to be raised above this doubt. For, not to mention that it occurred at a time of the greatest confusion in regard to the carcinoma question, when men like Virchow, Müller, Henle, Reichert, Remak, and others, were

busied in making firm the histological character of carcinoma, it might be a matter of great difficulty to make a correct diagnosis out of a nodule the size of a lentil in the lung of a dog.

Virchow, himself, also, in his great work on tumors, says that, judging by the forms, cancers resemble more the growths already present in the dog than such as are produced by inoculation with human cancer cells.

As to the cases of Nowinski it seems only necessary to mention the circumstance that only a preliminary communication has appeared, but never, so far as I know, a completed work.

I, myself, therefore undertook, in the laboratory of Professor Weigert, investigations, aseptically, with absolute freedom from suppuration, on mice, rabbits, and dogs. I inoculated under aseptic cautions, subcutaneously, among the muscles or in the abdominal cavity. Since the inoculations ran, on the whole, a tolerably similar course, a description of one will suffice for a record.

On the 14th of November pieces of carcinoma of the size of a small lentil were inserted under the skin of the back of four white mice, two hours after extirpation (mammary carcinoma). For this purpose the hair was cut off from the place of inoculation; it was washed with sublimate; then this was removed with alcohol, and the alcohol with ether.

November 18. Fixation of the piece on the skin beginning.

December 3. Piece of carcinoma somewhat enlarged, grown firmly to the skin, loosely to the subcutaneous connective tissue where it may be moved. Mouse quite lively.

December 7. Tumor decidedly enlarged, as large as a large bean, feels hard like a carcinoma. Mouse lively.

December 11. Tumor grown still firmer to the skin, appears to have moved upwards. It has become smaller, but is still larger than a lentil.

The tumor was cut out, together with the

surrounding skin, and a microscopic investigation undertaken. This gave the following result: Three zones may, without difficulty, be distinguished in a microscopic section.

(a) A homogeneous, structureless centre. In the middle of the cancer node, a part of the cancer mass is not at all present, but there exists a longish oval opening corresponding with the form of the piece of cancer. This opening is evidently the result of softening and absorption of the central piece. Farther towards the periphery, there are found some round cells in the structureless zone.

(b) The second zone is the remainder of the inoculated and now entirely changed piece of cancer. Of the alveolæ furnished with epithelium, there is scarcely anything to be seen, only on some places the former cancer structure is feebly indicated and recognized with difficulty. On the other hand, the whole piece of cancer is filled with numbers of easily stained round cells. Near by can be recognized large epithelial cells stained very feebly or not at all, and spindle cells in exactly the same condition.

The staining is, for the most part, still only possible in the nucleus, while the protoplasm is quite pale and difficult to recognize.

(c) The third zone is separated at the periphery, especially in the sub-cutaneous connective tissue. It consists, there, of a vigorous growth of young, succulent connective tissue with large spindle cells. In the further course these cells become smaller and the connective tissue becomes poorer in nuclei, which keep on growing smaller until they become like the ordinary subcutaneous connective tissue.

The many blood vessels are noticeable. They are filled to distension and bear a wreath of extruded white blood cells in their walls and around them. These vessels enter, for the most part, from the side and from below, *i. e.*, from subcutaneous connective tissue, and evidently send

branches into the changed cancerous growth. In many places they are very numerous and run in a radial direction or parallel to one another.

* * * * *

If the natural course of the destiny of the inoculated piece of cancer is not interrupted, then it will be either perfectly absorbed until there remains at last nothing more than a small scar from the inoculation; or the tumor, after the connection with the rete, becomes smaller and continues to move upward, *i. e.*, toward the surface of the skin. The skin ulcerates at some place and the tumor is, in a few days, pushed out. After this, the tolerably round and smooth bordered wound in the skin soon closes.

That the increase is not to be ascribed to an independent growth of the tumor, which is only successfully combatted by the peculiar resisting power of the animal tissues, or through the constitutional relations of the animal, is shown in this way, that one gets exactly the same picture of adhesion and enlargement, then of diminution, extrusion, or absorption, if he implants physiological tissue in place of the piece of carcinoma.

I have for this purpose made use of a lymphatic gland or a piece of a freshly excised breast gland.

The result of all inoculations I can so far sum up: I did not succeed in animals—mice, rabbits, dogs—in producing a carcinoma artificially by implantation. An enlargement of the piece of carcinoma which has been introduced often occurs, but it is only apparent, and is to be explained by the penetration of numerous white blood corpuscles, the new formed blood vessels and, perhaps, new formed connective tissue rich in nuclei. An independent growth of the implanted carcinomatous cell compound into the neighborhood does not result. On the contrary, the piece of carcinoma is to be considered like an organic dead body in the living organism.

The result of the inoculation is no better

if the animals are placed in the most horrible hygienic relations, *i. e.*, they may be allowed to be hungry and wet. For example, the limbs of three inoculated mice sloughed off through the carelessness of the servant. The animals recovered and were quite healthy again, but the piece of carcinoma did not grow at all.

These negative results, which, as I accidentally learned during my lecture, have been also mentioned by other authors (Oscar Israel and Alberts), do not justify us at all in doubting the absence of results from inoculation. There must first be many more experiments conducted by various authors, in somewhat different form. It should be necessary according to my impression:

1. To change the place of inoculation so as to bring the piece of the carcinoma into different organs and neighborhoods, or to make arterial and venous injections, and other similar modifications. Koch, for example, could produce cholera in the duodenum alone.

2. A certain form of cancer, in a histological sense, should be chosen for inoculation, or a cancer in a certain stage of growth, since it might be possible that the poison, virulent in these only, is divested of power in other cancers.

3. The animals, most properly dogs or apes, might, in the sense of Beneke, be placed in the most favorable predisposition.

Alberts has made an attempt, undoubtedly negative, with this end in view.

The most favorable material is in every case an individual already suffering with cancer, then apes, after that, dogs, etc.

Hahn introduced under the skin of a woman suffering with carcinoma of the breast, a piece of her own cancer, and reported that it grew. Virchow was able to reply, very shrewdly and pointedly to this, that the infection is not demonstrated by this growth alone, since, then, all implantations of hair, as well as all Reverdin-Thiersche's transplantations of hair and

skin upon an infection, may be included. Unfortunately the communication of Hahn was only very short, but if he could show that the piece of carcinoma not only grew but penetrated into the surrounding tissue, and this stimulated to a new growth, then an important step in advance would have been made.

According to my views of the etiology of cancer, which I have expressed above, I could not hope to go further in the question of infection, on the line of microscopic study of bacteria. Nevertheless, I undertook this task in order to be clear concerning the bacilli, which are, on various sides, asserted to be the cause of cancer, and also to guard by a warning from unpromising studies those investigators about to enter upon this, as I believe, mistaken path. I do this because a whole class of authors have pronounced in favor of the bacillus described by Scheurlen, some of these ratifying them through their own observations, some even claiming the priority.

I will only briefly mention that Schill asserts the presence of bacilli in cancer, and of filamentous fungi in carcinoma and sarcoma. Concerning their etiological meaning he certainly says nothing.

Then, O. Friere, in Rio and Perrin, later Barnabei and Sanarelli, both in Siena, asserted that they found the cancer bacillus; indeed, the latter claim to have produced cancer artificially in animals by their means.

Finally, Franke of Von Ziemssen's clinic (Münch. Med. Wochenschr. No. 4) has quite recently confirmed in essentials the investigations of Scheurlen; indeed, he goes so far as to assert that he has found the bacterium in the blood of carcinomatous and sarcomatous patients!

I will delay, however, on the work of Scheurlen only, since this seems to me, relatively, the most of all deserving of attention.

According to Scheurlen, a third of the dried preparations made from the cancer

juice, should contain spores that ought to stain in the well-known way. I could not satisfy myself of the presence of these spores, but saw only fat drops, which appear exactly like spores. If a soft piece of cancer is vigorously shaken with ether and chloroform in a test-tube, by which the fat is extracted, then we may convince ourselves that the fat drops which are impressing themselves as spores, diminish and disappear. I have seen quite large cells whose protoplasm appeared granular as though filled with many cocci. But these granules were much smaller than the spores.

Besides on theoretical grounds it may be seen that the discovery of spores must be insecure and contradictory. If so many spores are contained in the juice, then these must grow to bacilli, which must be much easier to see than the spores. Now, Scheurlen says that he has found very few bacilli in the juice. In the sections he has seen neither bacilli nor spores. Besides all this, the spores (?) stain remarkably easily, and grow with extraordinary rapidity to bacilli.

A rich material of cultures and inoculation is at my command. * * * *
I was able, therefore, to work with ten carcinomas. I did not confine myself to the nutrient soil used by Scheurlen, but at the same time made use of all at our command; gelatine, agar, combinations of the two, coagulated beef and sheep's blood-serum, human ascites fluid, fluid or coagulated, or gelatinized (5-8 per cent.) or, mixed with agar (1-1½ per cent.), potatoes. I have used the ascites fluid agarized when in a fluid state, because, at one time, I failed in a remarkable way to coagulate this even in a steam apparatus at 100° (212° Fahr.). I can not give the reason for this failure to coagulate. I was obliged to carry the fluid for some distance in great cold so that perhaps the albumen was modified.

For coagulating the blood-and-ascites-serum I found the well-known Koch's dry chamber required much time, and was ex-

pensive on account of the great amount of gas required. I made use, therefore, of an apparatus which is founded on a water bath, in which only the ends of the tubes lie obliquely in the water. In this is a thermometer on which the temperature is read at which the serum coagulates; for it is proper to determine this temperature of coagulation, since it is not at all constant and by no means fixed at 60° (140° Fahr.). I was often obliged to go to 78°, 80°, 81° (172.4°, 176°, 177.°8 Fahr.). After determination of this temperature, cold water is poured in to 10° (50° Fahr.) or less, a row of tubes is laid in the water-bath apparatus, and the water heated to near the point of coagulation. It is very easy to keep a certain temperature by regulation of the flame or pouring in of water.

By this water-bath chest a number of tubes are prepared in a very short time (10 minutes), while with Koch's chest it is often necessary to wait half an hour and longer, and a temperature from 80° to 85° (176° to 185° Fahr.) is very difficult to obtain. To be sure, the serum is often somewhat less clear.

In the two first carcinomas, I made use, like Scheurlen, of cancer juice; in the following inoculations, always of pieces of cancer which, now and then for purposes of demonstration, were as large as a cherry. For the most part I have inoculated.

10 tubes gelatine.

15 tubes agar.

20 tubes beef and sheep's blood.

20 tubes human ascites fluid.

The latter was usually coagulated, but with two carcinomas, quite fluid human serum was used, agarized and gelatinized, since this would not coagulate. With the exception of the gelatine, the tubes were put in a thermostat at a temperature of 39° (102.2° Fahr.), and remained there at least one month, very many for more than two months.

Although the inoculations undertaken by me are more than 350, a specific bacterium has never grown, so that I am justified in the following proposition:

We do not succeed, with all our present culture soils and usual methods, in cultivating a bacterium from a cancer which stands in an etiological relation with the growth.

Of course, I have sometimes got bacteria, as is not to be avoided in the cleanest and most skillful work in bacteriology; there were, on an average, among twenty tubes always two or three contaminated, therefore a very good result. Among others I have got a yellow sarcina, and once, the *Staphylococcus aureus* from a carcinoma that I carefully inoculated the second time, twenty-four hours after extirpation, while the inoculation of the same cancer the first time did not give this purulent bacterium. It must therefore be granted that this bacterium, the *Staphylococcus pyogenus aureus*, existed in the air of the laboratory.

But Scheurlen's bacterium I have never obtained, except in one inoculation, considered below, and can assert that it was not contained in the carcinoma.

Since Scheurlen not only holds firmly to his bacillus, but asserted that he had verified the diagnosis of cancer by a puncture for the gastric juice and the discovery of the bacillus, therefore, I do not consider it superfluous to remark that I have made a subcutaneous injection of the bacilli given me by Scheurlen himself, in dogs, rabbits, mice, and a dove, without producing in any way a pathological disturbance.

I will not enter further upon a wider criticism of the work itself, only I might emphasize that if so many spores are contained in the cancer juice, Scheurlen, himself, by his own inoculations ought to have obtained much more successful cultures.

Further, it is without an analogy that a bacterium taken out of the body should grow on a single soil only, but afterwards may be transferred from this soil to every possible one, with vigorous growth. Although such a possibility may not be completely denied, Scheurlen certainly ought to have given much greater attention and deeper study to this remarkable fact. He should,

at least, have sought an explanation for this discord.

And, finally, a chief characteristic of a bacterium is lacking in the work, namely, the behavior upon agar and gelatine plates.

In fact, on the ground of my inoculations and the above theoretical considerations, I consider every discussion as to the causation of cancer by a bacterium as useless; but, for a total clearing up of the matter, it would still be desirable to investigate what sort of a bacterium the one described by Scheurlen might be, and whether it is often to be found in cancer, naturally, as an accompaniment. Now, it is well known that it is very difficult to fix the identity of a bacterium. Both Koch and his pupils, Carl Frankel, Eisenberg, and others, still hesitate to declare the bacilli of chicken-cholera and the septicæmia of rabbits as identical, although they agree in every respect.

I once found the same bacterium which Scheurlen has described when I placed a piece of carcinoma directly upon a potato. After twenty-four hours at 39° (102. 2° Fahr.), a vigorous growth followed. Comparative investigations of this bacterium with Scheurlen's and that taken direct from the potato without inoculation with carcinoma, has led me to the result that the bacillus described by Scheurlen is to be designated as potato-bacillus. The spores of this bacillus are tolerably resisting. I have, for instance, left a potato in sublimate (1 to 1000) for two hours, then boiled it for two and a half hours in a steam apparatus, and still found the bacillus upon the potato.

I might here refer to an important work by Globig, in which he shows that many bacteria grow for the first time between 60° and 70° (140° and 158° Fahr.), and that the sterilization of blood serum is extraordinarily difficult. Hence it may be seen how easily error may slip in if a series of tubes are not free from germs.

Concerning the point "potato-bacillus," I must make one more remark. These

bacilli may be designated, without being very exact as those "which grow easily upon slices of potato and are often observed as settlers upon them" (Flügge, Die Mikro-organismen). Hence the domain of this bacillus is tolerably large. Flügge specifies only four potato-bacilli. But there are many more, although they have not been sufficiently studied, separated, and, above all, named.

I have, as mentioned above, found one agreeing perfectly with Scheurlen's, and enumerate it among the potato-bacilli for the following reasons: In the first place, the morphological relations and the spore formation are exactly alike; then the bacillus is movable; it liquifies gelatine and forms a white skin upon it; then it shows, for the most part, slight, wavy, wrinkled, mesentery-like growths; finally, it is not pathogenic. Every potato-bacillus, *par excellence* (the *B. mesent. vulgar*, Flügge), occurring in earth, dust, decomposing fluids, fæces, etc., possesses all these peculiarities, but, examined carefully, it is not quite identical with Scheurlen's.

The description of the universally distributed *B. mesent. fuscus* (Flügge) fits this much better, only this grows dirty-brown upon the potato, while Scheurlen's grows more reddish, rusty-colored, although this red, on many potatoes, passes into red-brown and brownish, as I have convinced myself.

In case the Schizomycete which has engaged our attention, should still have no name—it has often been seen before—then, perhaps, the designation *B. mesentericus robiginosus* (rust-colored) would apply. But in no case would the name cancer-bacillus, be justified, not even pseudo cancer-bacillus; and for this reason I have given the whole account of the potato-bacillus.

The results of my investigations so far as they had in view the peculiar irritant of cancer, have turned out entirely negative; also, according to the theoretical considerations stated above, it is not to be supposed

that this great aim—the discovery of the etiology of cancer—will be attained in a short time. On the contrary, it may here be emphasized, in conclusion, that first of all, the foundation must be laid for an earnest, intelligent, *bacteriological* labor for the etiology of cancer, *i. e.*, the inoculability of the same. Without this foundation, the discovery of a bacterium through culture seems to me not only difficult but useless.

We must not forget that the mechanism of the etiology of carcinoma is in any case very complicated, and that we shall determine this bacillus only after accomplishing successful inoculation with pieces of cancer, and by new methods of cultivation which shall agree with the physiological conditions of the hypothetical micro-organism, or, generally expressed, shall fit in with this mechanism.

THE PRESENCE OF BACILLI IN SYPHILIS.

[Abstracted and Translated from the German by Dr. Elbert Wing.]

In an Inaugural Dissertation presented at the University of Berlin, Dr. John A. Fordyce, of Chicago, in addition to a review of the literature of the subject, reported some original work of his own. The examinations, made at the clinic for skin diseases of Dr. Lassar, of Berlin, were reported as follows:

CASE I.—Moist papule of the lip. Infection of two months' standing. Treatment, four bichloride injections. Examinations of cover-glass preparations according to Lustgarten's method were negative. When the preparations were not completely decolorized, various cocci, and short, thick bacilli, such as are present in the normal secretions of the mouth, were found.

CASE II.—Late syphilitic ulcer of the scrotum. History was negative as to syphilis. Cover-glass preparations stained according to Giacomini with anilin-oil fuchsin, decolorized with chloride of iron, gave diplococci in groups of three and five, also

single ones, double the size of gonococci, which they otherwise resemble. Negative result with Lustgarten's method.

CASE III.—Broad condyloma of the vulva. Inguinal glands enlarged. No treatment. Examinations with Giacomini's method gave bacilli which morphologically correspond with those of Lustgarten, and others half as long and as thick again. Lustgarten's method showed the characteristic slender bacilli, but not in such great numbers as that of Giacomini.

CASE IV.—Papillo-serpiginous syphilide of the arm. Secretion obtained by abrasion of the surface. Results were negative with the method of Giacomini, and also with that of Lustgarten.

CASE V.—Diagnosis, methods, and results the same as in case IV.

CASE VI.—Mucous plaque of the right tonsil, stained with Giacomini's method gave numerous cocci, and short, thick bacilli. Lustgarten's method gave negative results.

CASE VII.—Broad condyloma of the vulva. Inguinal glands were enlarged. Treatment was continued one week. The secretion was stained according to Doutrelepon's method, double staining of safranin. The bacilli corresponded to the syphilis-bacillus, and also the short, thick ones described in Case VI.

CASE IX.—Syphilitic pimphigus in a child. Double safranin staining, according to the method of Doutrelepon and Schütz, gave cocci, single, and in groups of two, three, and four; also diplococci resembling gonococci, but larger, and always alone.

CASE X.—Ulcer on the perineum, one month old. Diagnosis was uncertain, but three years prior the patient had an ulcer on the penis, skin eruption, alopecia, etc. The secretion was stained by the methods of Doutrelepon and Schütz. In every field groups of ten to twenty of Lustgarten's bacilli, of crossed and curved forms, as if button-like swellings were found; also cocci, single and in twos and fours, like streptococci, and short, thick bacilli. Both the 1 to 16 acid decolorizing solution of

Doutrelepont and Schütz, and also a stronger, 1 to 8, were repeatedly used without any change in number or variety of forms of the bacilli observed.

CASE XI.—Broad condyloma from the anus of a child. Every field was full of cocci in groups and chains, as well as the Lustgarten bacilli, and the short and thick ones mentioned before.

CASE XII.—Secretion from a mucous plaque of the tonsil. The method of Doutrelepont showed cocci in great numbers, also bacilli resembling those of Lustgarten—long, thin, crossed, and curved. The cocci were in groups of two to four and in chains.

CASE XIII.—Broad condyloma from between the vulva and the inner surface of the thigh. The method of Lustgarten gave an exquisite picture of the syphilis bacilli. Every field contained one or more groups, and every group fifteen to twenty bacilli, which lay partly parallel, partly crossed, and all possessing the characteristics which Lustgarten has described. Doutrelepont's method showed the same bacilli, with others, and also cocci. Staining with Ziehl's solution and decolorizing with 33 $\frac{1}{3}$ per cent. hydrochloric acid, double staining with methyl-blue showed the bacilli, but in smaller number.

CASE XIV.—Broad condyloma of the vulva. Roseola syphilitica. There was no treatment. Lustgarten's method of staining the secretion gave a result similar to Case XIII. Doutrelepont staining showed, in addition to the syphilitic bacilli, the other bacilli and cocci in great numbers.

CASE XV.—Mucous plaque of the lip. Lustgarten staining of the secretion gave negative results.

CASE XVI.—Broad condyloma of the vulva. Enlargement of the inguinal glands; roseola syphilitica. There was no treatment. Doutrelepont staining of the secretion shows syphilitic bacilli in straight and curved forms, with and without the button-like swelling, lying partly singly and partly in groups. Also numerous cocci and vari-

ous forms of bacilli. Lustgarten's method shows only the bacilli of syphilis. Giacomini's method shows diplococci and streptococci, which resemble gonococci in size and form, but which are not confined in pus-corpuscles.

CASE XVII.—Secretion was obtained by abrasion from a small syphilitic papule or the skin. The Doutrelepont and Lustgarten methods gave negative results. He says: "At this time my attention was called by Dr. Lassar, to a work of Kühne in Wiesbaden, entitled, 'Concerning a universal procedure for demonstrating the schizomycetes in animal tissues,' in which he claims that by the use of two dye-stuffs—crystal-violet and methyl-blue—he can stain a greater number of various schizomycetes in the tissues than by any other means. The method is as follows. Into a dish containing a 1 per cent. aqueous solution of carbonate of ammonium filter a concentrated aqueous solution of crystal-violet until a drop placed upon blotting paper makes an intense, dark-violet speck. Place the dehydrated sections in this fluid for five or ten minutes—if tubercle bacilli are suspected, for one hour—then wash in water and place for one or two minutes in the usual solution of iodide of potassium (Iodine, 1; iodide of potassium, 2; distilled water, 300—Ed.), wash again in water and place in concentrated alcoholic solution of fluoresceine until they are nearly decolorized. The balance of the staining material is then taken out in two dishes of absolute alcohol. Oil of cloves may be used to test the decolorizing. When placed in this oil, if the sections show no more violet clouds the oil is removed with turpentine or thyme, and they are placed in xylol."

CASE XVIII.—Broad condyloma between the vulva and thigh. The secretion, stained by Giacomini's method, shows large numbers of syphilitic bacilli. With a Zeiss achromatic objective of 2 mm. focus and ocular No. 8, parts of the bacilli showed unstained, the swelling on the ends being more intensely stained.

In addition, diplococci, resembling morphologically gonococci, were present in groups of ten to thirty, inclosed in pus-corpuscles. These were very numerous and presented the appearance of stained gonorrhoeal pus. Besides these there were other bacilli and cocci. Staining the secretion with Kühne's method gave a similar result, the diplococci taking an intense black-blue color.

In six other cases the secretion from hard chancres of the prepuce was examined by both the method of Lustgarten and by that of Kühne. The former showed the bacilli of syphilis, the latter cocci, single and in chains and groups. The cover-glass preparations in the Kühne method were left in the solution from twenty to sixty minutes. The secretion from three hard chancres of the prepuce was examined by Giacomi's method and showed the bacilli.

The examination of the secretion of a hard chancre of the lip, by both Lustgarten's and Kühne's method, was negative.

In two cases of macular syphilitic eruption, the examination of the secretion of papules of the skin gave negative results.

In two cases of late serpiginous ulceration of the soft palate, the secretion was stained in the crystal-violet solution for twelve hours without showing the characteristic bacilli. There were, however, numerous zoöglear masses, styphilococci, streptococci, and bacilli of various size and form. Lustgarten's method decolorized these masses much better but not entirely.

The examination of a mucous plaque of the tonsil gave a similar result.

The examination, by Lustgarten's method, of an ulcerating gumma of the nose, gave a negative result.

These examinations of the syphilitic secretion gave positive results in fifteen cases, and, with one doubtful exception, these were limited to secretions from the genitals or their immediate vicinity. "I can confirm the observation of Matterstock, viz., that

the bacilli are more numerous in the secretion from places where the body temperature is constantly maintained, and in which the secretions stagnate and partly decompose. In cases where the hard chancre lies free, and in which the secretions are slight, the bacilli are far less numerous. In cases of hard chancres hidden between the folds of the prepuce, and in those in which the secretion came from condylomata, the micro-organisms were exceedingly numerous."

A comparison of the several methods of staining shows that while all of them stain the characteristic bacilli, the decolorizing method of Lustgarten most successfully decolorizes the cocci and all other bacilli.

The bacilli of Lustgarten are found in very great numbers both in the smegma preputialis and in the corresponding secretion of the female genitals in non-syphilitic persons. And there is no manifest difference in the power of resistance against alcohol between these bacilli and those found in the syphilitic secretions.

In some cases they withstood the action of alcohol for two minutes after they were decolorized in permanganate of potassium solution and sulphuric acid, but in others not so long.

The method of Doutrelepon (48 hours in a 1 per cent. methyl-violet solution) stains the bacilli of syphilis, as well as others of different shape and size, and also cocci, streptococci, and zoöglear masses. The appearance resembles the one obtained in staining the secretion of broad condylomata by the same method.

In regard to the differential diagnosis between the bacilli of smegma, or syphilis, and those of tuberculosis, the latter, beyond question, have a much greater power of resistance against the action of acids.

The staining by Ziehl's solution, and decolorizing in 33 per cent. hydrochloric acid, frequently gives a negative result with smegma and condyloma secretion. In other cases bacilli appear but sparingly, and disappear upon longer action of the acid.

The finding of bacilli in the mucous plaques of the mouth is to be taken with caution, since there are so many varieties of bacilli in the normal secretion of the mouth, and an error may arise because the decolorizing methods do not suffice to differentiate, with absolute certainty, the normal from the pathological.

In the tissue of five freshly excised hard chancres of the prepuce, stained according to both Lustgarten's and Doutrelepont's methods, bacilli were found in two cases. Of thirty sections of each chancre, six in all contained bacilli. Two sections contained twelve bacilli, singly and in groups of from two to four; in one case crossed, in another parallel. They were situated in cells, and of the size and shape described by Lustgarten, and were located as a rule at the border between sound and infiltrated tissue. In some sections bacilli were found upon the surface of the ulceration which were not morphologically distinguishable, except that they did not lie in the cells.

The very great infrequency of the bacilli renders the search for them exceedingly painstaking, and when they are once found it is no easy matter to again bring them into the field of vision. Indeed, it is possible only by the use of a mechanical stage and a Maltwood finder, or its substitute.

In three hard chancres examined, most careful search failed to reveal any trace of micro-organisms. However, with sections from two of these chancres, which lay in the crystal-violet solution twelve hours, he had better results. In every two or three of these sections bacilli appeared which were in every way identical with Lustgarten's bacilli. They were stained an intense blue-black, were often in the cells, and lay at the border of the infiltrated tissue. In one polygonal-formed cell two bacilli were crossed, in another two lay parallel, and in still another they were disposed singly.

The largest number found in any one section was twelve. In addition, groups of

cocci were found both upon the surface of the chancre and in the infiltrated tissue. Every section contained one or two groups of cocci of from fifteen to twenty, whose size and shape indicated the cocci of erysipelas.

The most satisfactory results were obtained from a recently excised condyloma of the labia majora, stained according to the method of Kühne. Every section contained groups of cocci, both upon the surface and in the infiltrated tissue, which resemble those mentioned above. Every second section contained bacilli of syphilis, singly and grouped. In one section he was so fortunate as to find one collection of twenty such bacilli in the subcutaneous cell-infiltration; they lay crossed, parallel, and in every possible angle to one another; they were 3.5 to 7 μ ., and occasionally joined themselves in strings of three or four. Their form presented the greatest variety, straight rods and S forms; many exhibited the button-like swelling at the end, and excrescences at the middle of the bacilli were seen, as if a spore were separating from them. He also found similar appearances in bacilli from the secretion of chancres, stained by the same method. Near these groups of bacilli lay cocci, at times in groups of fifteen or twenty, and at times in chains. One of the latter suggested the clumps of nucleoli (Haufen von Körnchen) which Doutrelepont and Matterstock have described as decaying (zerfallene) bacilli. In the cell-infiltration there were many of the mast-cells of Ehrlich, with bright-blue colored granules on their edges, which lay in double rows, somewhat like an inverted V. These occur at moderate intervals, and bear no relation to cell-granulation, but look as if they were bacilli, as they represent the description of Birsch-Hirschfeld. He had himself seen that they do not belong exclusively to syphilitic infiltration, since he had met them also in simple condylomata.

In fifteen sections from simple condylomata (spitzen condylomen) stained with

crystal-violet, cocci alone appeared, and they were mostly upon the surface.

The investigation of a hard chancre of the lip by Lustgarten's method gave a negative result.

The small number of his investigations does not permit a conclusion to be drawn as to the relative value of the methods of staining sections of tissue which were employed. However, it seems to him that the method with crystal-violet stains a larger number of the bacilli than either that of Lustgarten or Doutrelepoint. It can not be said what the shortest time is in which, by that method, the bacilli can be stained. With cover-glass preparations twenty minutes suffices. Attempts to find bacilli in sections which have been stained for less than twelve hours were not made. It is probable that a shorter time would suffice if a warming-oven were employed. The decolorizing method of Kühne was the only one employed.

It is clear that a conclusion in regard to the diagnostic value of the bacilli when found in cover-glass preparations can not be drawn, since they appear in the normal secretions of the male and female genital organs.

The bacilli found in the syphilitic tissue, however, stand related to the pathological process, but what the nature of the relation is can only be determined by further investigation, culture-trials, and inoculation experiments.

REPORT OF THE ROTUNDA HOSPITAL.

Obstetricians all over the world are always eager to read any report from the Rotunda Hospital, Dublin, and that for the three years ending November, 1886, has just been published in the *Transactions of the Academy of Medicine in Ireland*, Vol. V, 1887, having been presented by Mr. JOHN LILLY LANE, Ex-Assistant Physician to the Obstetric Section of the Academy last June.

For the past three years the corrosive-sublimate solution has been more freely used both for the hands and for intra-uterine injections, and has almost taken the place of carbolic-acid solution, except in cases of considerable hæmorrhage, suspected renal mischief, or great corpulence; the reason of the continued use of the carbolic-acid solution in these cases being that as absorption is so much greater there is danger of mercurial poisoning manifesting itself by diarrhœa, tenesmus, bloody stools, etc., while with the use of the 1.80 solution of carbolic acid no bad symptoms have been noticed. Iodoform pessaries are not used so frequently now, and only when the lochial discharge becomes foetid, and continues so after the first washing out of the uterus.

During the three years there were 3,414 patients attended in the hospital, including twelve cases of threatened abortion. These twelve cases are deducted in the following percentages. There were forty-three deaths from various causes, making a mortality of 1.25, or one patient in 79.39. One death occurred from supposed acute yellow atrophy of the liver, about a week after the patient left the hospital, which she did contrary to orders. One death occurred from septicæmia the day after the patient went home, this also contrary to orders. Two patients died over five weeks, one over four weeks, and three over three weeks after delivery; seven deaths were due to hæmorrhage, two to acute yellow atrophy of the liver, three to convulsions, one to exhaustion from discharge from encysted peritonitis, one to congestion of the lungs, three to phthisis, one to tuberculosis of lungs and brain, one to acute bronchitis, three to pleuro-pneumonia, one to pneumonia and Bright's, one to syncope, one to excessive vomiting with hæmatemesis, and eighteen to septicæmia. These eighteen from septic infection give a mortality of .52 per cent., or one in 189.6; but a better criterion of the state of the hospital is the number of patients that had absolutely normal temper-

atures and pulses during the puerperal period. Taking the maximum physiological temperature as 100.4° (38°C.), the percentages of cases that did not exceed this maximum at any time during the puerperal state is as follows for the three years: In 1884, 74.66; in 1885, 83.54; in 1886, 85.75.

Not only has there been a steady increase in the number of patients each year, but the general health of the hospital has improved, as may be seen by the following numbers showing the number of abnormal temperatures for each of the three years.

	1883-84	1884-85	1885-86	Total
Number of patients in hospitals each year.....	1,109	1,112	1,193	3,414
Temperature above 100.4° , not above 102.2° Fahr.....	176	94	93	363
Temperature above 102.2° , not above 104° Fahr.....	86	68	58	212
Temperature above 104° , not above 105.8° Fahr.....	19	21	17	57
Temperature above 105.8° , not above 107.6° Fahr.....	2	2
Total abnormal temperature each year.....	281	183	170	634

Forceps Cases.—There were 203 forceps cases, a percentage of 5.96, or one in 16.75. Of these, six died, but only two from septicæmia, one having a foetid discharge when admitted. In the other case the child was dead and œdematous when delivered; placenta adherent, removed, when it, with the discharge, was found to have a very foetid smell; slight post-partum hæmorrhage. The six cases gave a mortality of 2.95 per cent., or one in 33.83 in forceps cases. The forceps are not applied in the hospital unless there are positive indications to warrant their application either on the part of the mother or the child. Those on the part of the child that are considered as indicating danger to life are a very quick or a very slow foetal heart, or the escape of meconium *per vaginam* when the head presents. Dr. Neville's axis-traction forceps are those most frequently used. Mr. Lane thinks it has many advantages over the axis-traction forceps with rods, being more portable, more easily applied, distends the perineum less, can be used, if desired, as a simple forceps, can

be more easily cleansed, and there is no danger of injuring the vagina by the mucous membrane being caught between the blades and the rod.

Treatment of Retained Placenta, Especially when Placenta is adherent.—Mr. Lane divides the subject into two classes: 1. Cases of simple retained placenta. 2. Cases of retained adherent placenta. The first class he divides into two heads: Cases without irregular contraction, and cases of irregular contraction. The treatment of retained placenta without irregular contraction is very simple, provided the bladder be empty; but simple as it is Mr. Lane thinks that the hand is often passed unnecessarily into the uterus to remove it. It is often said that the hand should exert steady pressure on the fundus during the third stage of labor; but if this be not properly done, instead of doing good it will actually do harm, for, as the fundus is occasionally deflected to either side, usually the left, when pressure is made in the mesial line in the hope of expressing the placenta, the later flexion is still more increased thereby, folding the uterus as it were on itself, and pressing the placenta toward the fundus rather than from it through the os. He thinks that the present practice in the hospital, moving the fingers lightly over the uterus, is preferable, and much less tiresome to the hands of the operator. Of simple retained placenta he has seen some cases in which the placenta was immediately expelled when the fundus was raised out of an abnormal position and without pressure.

Cases of irregular or hour-glass contraction are sometimes met with in the third stage, and are said to occasionally occur naturally, but I believe it is much more frequently produced artificially, by the hand being placed during this stage not on the fundus, but somewhat lower down—possibly at the ring of Bandl—and pressure and friction there continually used, exciting and causing the circular fibres situated in that particular part of the uterus to contract

tonically. If this contraction-ring be below the edge of the placenta, it will prevent it from getting down into the lower segment of the uterus, or it may be gripped by the ring, in either case, perhaps, necessitating the introduction of the hand for its removal. Cases of retained placenta, due to irregular contraction, may be sometimes overcome, Mr. Lane thinks, by removing the hand from the uterus, and douching it out well, preferably with hot antiseptic solution, but with plain water if the hot solution be not at hand.

When the placenta is adherent, Mr. Lane believes the proper treatment is to pass the hand or the fingers into the uterus and detach it, but he considers that if the operator's hands be not perfectly aseptic, this is the most dangerous operation in midwifery, except Cæsarean section. It is not always possible to keep the hand within the membranes during the operation, owing to the friable nature of the placenta, necessitating the removal of small pieces at a time. In the Rotunda an anæsthetic, usually chloroform, is almost always given, in order that the hand may be passed a second time when there is any doubt whether all the placental tissue has been removed. In the three years of the report 37 cases of adherent placenta were removed, a percentage of 1.08, or one in 91.95. Of these 37 patients six died, a mortality of 16.2. But of the six deaths only two were due to septicæmia.

Laceration of Perineum.—When the perineum is lacerated over .75 inch the practice is, having douched out the vagina with antiseptic solution, to suture immediately, either with silk or catgut (continuous suture for the latter). The stitches are inserted deeply so as to bring the whole of the torn surface into apposition, and the results have been very satisfactory. If the torn surfaces be not accurately apposed the lochia would probably collect between the edges of the wound, causing them to become unhealthy, especially if the discharge be foetid, and this condition, when once produced, is likely to go deeper, possibly in-

vading the whole depth of the perineum, causing the stitches to slough out, and the wound to gape wide open.

Retention of Membranes.—In cases of retention of a portion of the membranes the practice in the Rotunda is to make gentle traction, having as a rule tied a ligature on it as close to the vulva as possible, thus gaining a firm hold so that it can be twisted, thus reducing the likelihood of its breaking. "Should the membranes break well inside the vulva, the best course is to allow them to remain there, but the douche may be used, which may possibly cause the piece to come away, and will in any event be beneficial if an antiseptic solution be used. This course is far preferable to introducing the fingers or the hand, whereby air is introduced—a fertile source of foetid discharge. As to hæmorrhage I do not consider it is ever traceable to the retained membrane, but to the imperfect contraction, which is the very cause of the membrane not being expelled."

Prophylactic antiseptic treatment of ophthalmia neonatorum is never adopted until the disease is actually manifest. Both eyes, even though only one shows symptoms, are then treated with nitrate of silver solution, eight grains to one ounce, pieces of lint dipped in cold water being kept constantly on the affected eye or eyes. When only one eye is affected it is well to have the other bandaged up so as to prevent contamination. The number of cases for the three years was .99 per cent., say one in 100, which is very low.

Infantile asphyxia is treated by Schultze's plan. First the finger is passed into the child's mouth, and the mucus removed as far as possible. The child is then placed on its back, and the operator's hands are put under its back so that they lie at each side of the spine, the fingers in the direction of the child's lower extremities, and its head resting, or partially resting, between the ulnar sides of the operator's hands. The index fingers are then passed underneath the axillæ from behind for-

wards, the remaining fingers continuing to support the back. The operator now stands up, allowing the child to hang with its feet downwards. The child is now swung upwards so as to cause the legs to fall over the body, and the thorax to be compressed by the thumbs, and then after an interval the legs are swung back to the original position, so that the child will be, as it were, in the vertical or standing position, whence it is again hoisted to the second position. This movement is repeated eight or ten times, and then the child is placed in a warm bath for a few minutes, during which time any mucus that has collected in the larynx is removed by aspiration through a catheter. Care should be taken not to jerk the child during the movements, lest some of the viscera be injured.

The Incubator, Mr. Lane is satisfied, has been the means of saving the lives of many infants in the hospital, since, notwithstanding the efforts of the mothers to keep them warm, the extremities of the children sometimes become œdematous and frequently assume an almost erysipelatous appearance, feeling quite cold, and accompanied with an inability to draw the breast, and marked fall of temperature; but when these children are placed in the incubator an improvement is visible in twenty-four hours, and generally after another twenty-four hours the child seems completely restored. Such children always get wine-why.

ILLINOIS STATE BOARD OF HEALTH.

The regular quarterly meeting of the Illinois State Board of Health was held in this city April 19 and 20.

The Secretary presented his quarterly report, in which he says that notwithstanding the exceptional severity and sudden and marked changes of the meteorological conditions which occurred during the quarter which ended March 31, 1888, there has been no serious increase of the mortality rate, as a whole, nor have the diseases which

assume an epidemic form prevailed to an unusual extent. The mean temperature for the quarter has been from five to eight degrees lower throughout the State than for any corresponding period during the last 15 or 20 years—the figures varying between these extremes in various localities.

* * * * *

This country cannot be regarded as safe from the menace of cholera so long as, on the one hand, and under existing conditions of maritime quarantine, we continue to receive large numbers of immigrants with their household effects from the recently cholera-infected districts of Europe; and, on the other, so long as the disease continues its ravages on the South American continent.

It is, at least, the part of prudence not to relax vigilance or effort so long as these conditions exist.

Considerable preliminary work has been done toward investigation of the water supplies of the State, in connection with the sanitary survey of the various localities to secure proper collection of the samples for the chemical and biological examinations, and for collecting and utilizing data concerning borings, shafts, and wells sunk in various parts of the State.

WEAR AND TEAR OF THE MEDICAL PROFESSION.

Since the close of 1887, I have been enabled to partly tabulate and analyze a mass of material accumulated during the past ten years bearing on the wear and tear of the medical profession of Illinois.

Even prior to the beginning of that period, I had become impressed in a general way with a conviction that this wear and tear was underestimated; that the active practice of medicine was not so conducive to longevity as is popularly supposed, nor as writers on such subjects—basing their conclusions on the data obtained from medical biographies, cyclopædias, etc.—had been led to believe.

The source of error in this latter instance

is obvious. The subjects of biographies, cyclopædia articles, memoirs, etc., are necessarily the men who have attained eminence, or at least prominence; and, in the nature of the case, prominence in the medical profession is largely the fruit of long service and length of days. In other words, the exceptional class which, partly by very reason of long life, has attracted most attention has been hitherto taken as an indication of the longevity of the profession as a whole. Thus we find one writer (Dr. Geo. M. Beard) citing the deaths of 490 Massachusetts physicians whose average age at death was 57 years, and 55 out of every 100 of whom attained to 70 years. The average age of the subjects of Gross' Medical Biography was 59 years, although it is ingenuously added that these "included several who died before their prime." Similarly Thacher's Medical Biography makes mention of 145 physicians, and the fact that their average age at death was 62.8 years is quoted—as are the other instances—as proof of the longevity of medical men.

Still another fact should be taken into consideration in the case of the class who figure in biographies. It is composed very largely of city physicians, and of the men who, in the smaller towns, are in a position to select their practice and adjust their labors with some regard to regular hours of sleep, meals, and relaxation. Comfortably housed at home, properly protected from the weather when making visits, free from the harassing cares of the *res angusti domi*, and beyond the torturing anxiety which too often besets the struggle for practice—the conditions of life in these cases are undoubtedly favorable to longevity.

But these are the fortunate few who bear no more numerical relation to the rank and file of the profession than the general officers do to the rank and file of an army.

Compared with these biographical subjects, upon whose length of honorable and successful years is predicated the assertion

that the wear and tear of the profession does not prevent its members from attaining a high average longevity—compared with these I have, as the result of an extensive correspondence and systematic record, obtained data which show that the average age at death—in Illinois, at least—is not much over 52 years, and that only about 11, instead of 35, in every 100 attain the scriptural limit of three score years and ten.

In older communities it is entirely probable that this rate may be exceeded. In Massachusetts, for example, the average age at death of 1,166 physicians, occurring during a period of nearly thirty-two years, is given as about 55 years; but the Illinois statistics—collected with painstaking care and dealing with more than double the number living annually—do not furnish any such favorable result. To a very great extent the discrepancy between Illinois and Massachusetts is due, no doubt, to the different conditions which obtain in the two communities—the one a comparatively newly-settled State, with a population containing less than the normal proportion of the middle-aged and beyond; the other one of the oldest settled commonwealths, with an excess of ages beyond the middle life, and with what Dr. Holmes calls the "adjustable conditions of living" so perfected as to materially conduce to the prolongation of life. But in addition to this difference there must also be taken into consideration the radical difference in the modes of collecting the data upon which the average age at death has been computed.

For Illinois these data have been obtained through official relations with an aggregate of some 14,000 physicians during a period of over ten years. The personnel may be taken as fairly representative of the profession generally, since it is composed of about one-sixth of physicians of a large city, Chicago, and the remainder of physicians of smaller cities and towns. During these ten years there has been an

average of 6,000 living per annum, and the aggregate deaths have been about 800, or an annual death rate of 13.3 per thousand. These round numbers, and the period covered, are cited to show that the data are extensive enough to insure substantially trustworthy results in the tabulations and deductions.

Of the total number of deaths—800—the age at death and the cause of death have been obtained in 686 cases, and from these data, from information contained in the official registers of the State Board of Health, from the statistics of the United States census and the mortality reports of Dr. John S. Billings, the following tables have been constructed.

Table No. 1 shows the annual number of Illinois physicians living at given ages; the annual number of all Illinois males living at the same ages; and the annual deaths for each class at the same ages. The ages are grouped in decades from 30 to 80: under 30 they are comprised in one group, embracing the ages from 24 to 30; and all over 80 form one group. The limits of the first group—24 to 30—are fixed by the fact that no deaths are reported under 24 years of age.

Table No. 2 shows the yearly death-rate per 1,000 among Illinois physicians at the ages specified; among the whole male population of Illinois, embracing all occupations, physicians included, and among both sexes of the whole population of the United States.

TABLE I.—Average number of physicians in Illinois living annually at grouped ages, and of all males in Illinois at same ages; Average No. of deaths annually of each class, 1878 to 1887, inclusive.

AGES.	LIVING ANNUALLY.		DEATHS ANNUALLY.	
	Physicians.	All Males.	Physicians.	All Males.
24-30	1,409	156,662	9	1,033
30-40	1,740	201,889	13	1,536
40-50	1,304	144,997	15	1,501
50-60	877	97,536	17	1,626
60-70	441	49,008	15	1,570
70-80	177	19,717	9	1,269
Over 80	42	4,542	2	572
Totals	6,000	674,346	80	9,197

TABLE II.—Yearly death-rates per 1,000 of physicians in Illinois, of all males in Illinois, and of both sexes in the United States—at grouped ages.

AGES.	YEARLY DEATH-RATE PER 1,000.		
	Physicians.	All Males.	Both Sexes.
24-30	6.4	6.6	9.7
30-40	7.4	7.6	11.9
40-50	11.5	10.8	13.9
50-60	19.5	16.5	18.1
60-70	31.1	32.0	23.8
70-80	53.0	64.4	46.9
Over 80	476.1	126.0	113.3

An examination of the above tables shows that while the death-rate of physicians in Illinois for the first few years after entering upon the practice of medicine is lower than that of all males in Illinois, and greatly less than that of the whole population of the country at large, it increases beyond that of the former class during the decade from 40 to 50, and is greater than that of the latter class in the next decade.

The obvious inference is that physicians, on entering practice form a class of selected lives, since they have an advantage of nearly 3 per cent. as compared with all males at the same ages—that is, from 24 to 40; and of over 50 per cent. as compared with the total population, both sexes, at the same ages, this latter great disparity being, no doubt, largely due to the casualties among women during the child-bearing period.

As the wear and tear of practice begins to tell this advantage is soon lost, so that during the period from 30 to 70 the death rate of physicians is 8 per cent. greater than that of all males, and during the period from 40 to 70 it is more than 11 per cent. greater than that of both sexes.

An examination of the causes of death in the following table reveals the result of the exposure, irregular hours, broken rest, and mental anxiety, which are the lot of the average practitioner :

TABLE III.—*Principal causes of deaths of physicians in Illinois during the ten years ended December 31, 1887*

CAUSES.	Number.	Per Cent. of Total.
1. Phthisis.....	122	15.3
2. Diseases of the Lungs and Respiratory Apparatus.....	115	14.4
3. Diseases of the Brain and Nervous System.....	105	13.1
4. Zymotic Diseases.....	82	10.0
5. Misadventure and Violence.....	75	9.4
6. Diseases of the Heart and Blood-vessels.....	67	8.4
7. Diseases of the Stomach and Digestive Tract.....	48	6.0
8. Bright's Disease.....	31	3.5
9. Diseases of the Liver and Appendages.....	26	3.2
10. Enteric Fever.....	24	3.0

Of the grouped causes of death above given it will be seen that consumption, diseases of the respiratory organs (including 91 from pneumonia), and Bright's disease caused 268 deaths, or more than one-fourth of the total. If to these be added a share of the deaths from diseases of the heart—the sequelæ of rheumatism—a fair estimate may be made of the effect of exposure to the vicissitudes of weather upon the wear and tear of medical life. As a result of mental strain and anxiety, of insufficient, irregular, and interrupted sleep, and similar causes is the total of deaths from diseases of the brain and nervous system, embracing forty-three from various forms of paralysis. In the group of zymotic diseases (enteric fever given separately) there were five deaths from diphtheria, one each from small-pox and yellow-fever, and eight from traumatic infection (septicæmia, etc.), all contracted from attendance upon patients.

Less creditable to the morale of the profession are the eighteen deaths from over-doses of opiates and narcotics, the seven admitted suicides, and the deaths from alcoholism, direct and indirect—twelve of the former and at least eight of the latter. There is this to be said, however, in this connection, that the proportion of mortality from these causes is steadily diminishing, and my observation shows that this diminution is largely the result of an amelioration of the conditions, especially

of country practice, due to better roads and methods of locomotion, increased comfort in living, and less physical strain upon the practitioner. Ten years ago the resort to stimulants upon exposure to the weather and under the harsher conditions of practice which then obtained was much more common than it is to-day. And this is also true of the use of opiates and hypnotics. The practitioner—familiar with their power to temporarily stimulate to further endurance, or to procure sleep when nervous and exhausted—had formerly greater temptation to resort to the use of these agents, always ready to hand.

While there is a total of twelve deaths reported during the ten years as due to "alcoholism" direct, there has been only one in the last four years; and of the eighteen deaths from "over-doses of opiates and hypnotics" in the entire period, there has been only one in the last three years. In addition to amelioration in the conditions of practice as a cause of this result, it is only fair to take into consideration, also, the improved moral status of the profession in this State.

Although the figures and deductions here submitted are believed to be substantially accurate—being, if anything, understated—they are offered only as a provisional contribution to the study of the subject, which is by no means exhausted. The numbers under observation and the period covered are greater than anything heretofore utilized for this purpose in this country, so far as I am aware, and have cost much labor, which may be materially lightened in the future by very little effort on the part of physicians in making returns of death certificates, and by county clerks in forwarding them to the office of the board. It is hoped that the interest which this presentation of the subject may reasonably be expected to arouse will lead to this result.

MEDICAL-PRACTICE ACT.

There were issued during the quarter 138 certificates authorizing the practice of

medicine in the State—126 of which were to graduates upon diplomas from medical colleges in good standing; eleven to non-graduates upon proof of ten or more years of practice in the State prior to July 1, 1887, and one upon satisfactory examination; six duplicates were also issued upon proof of the destruction of the originals. Certificates were issued to twenty-six midwives—fifteen upon diplomas or licenses, and eleven upon examination.

Of the 149 applications for medical-practice certificates, eleven were refused to applicants who were unable to comply with the provisions of the law and the requirements of the board based thereon. There were also eight applicants who presented diplomas from colleges which do not fully comply with the prescribed standard of study and instruction. Certificates were issued to these only after passing examinations in the neglected branches, or furnishing evidence of the necessary proficiency in the omitted qualifications. Two applications have been received for itinerant license, one from Michigan and one from Indiana. In accordance with the action of the board heretofore, they were refused. Since July 1, 1887, \$9,700 have been refused by the board for licenses of this character.

MEDICAL EDUCATION.

More interest is now evinced in the subject of medical education than ever before. This is true of the country generally, and during the quarter, communications have been received from both extremes of the continent showing the progress being made. The Secretary of the Maryland State Board of Health announces the enactment by the Maryland legislature of a medical-practice act similar to that of Illinois. The Secretary of the California State Board of Medical Examiners gives notice that after the 1st of April, 1891, no diploma issued thereafter will be recognized as the basis of a certificate entitling to practice, unless the college shall have exacted

three full years of study, and attendance upon not less than three full regular courses of lectures, delivered during three separate years, as conditions of graduation. The St. Louis Medical College, whose course of instruction heretofore has been thorough, has decided to lengthen its lecture term to six months. The Medical Department of the University of Wooster, at Cleveland, Ohio, and the Medical College of Ohio, at Cincinnati, will, at the next session, require attendance upon a three years' graded course of lectures.

IM MEMORIAM.

The Secretary was instructed to transmit a message of sympathy to the widow of Dr. Cornelius Rea Agnew, and to prepare an expression of the sentiments of the board upon the death of that distinguished physician, sanitarian, and medical teacher.

The secretary spoke of the cordial support and ready interest Dr. Agnew had always given to the efforts of the board for the elevation of the status of the medical profession and the promotion of practical sanitary measures.

ON THE TREATMENT OF PHTHISIS BY CREOSOTE.

[Translated and Abstracted by Dr. Lester Curtis.]

Two papers on this subject have recently appeared in the *Berliner Klinische Wochenschrift*, one by Dr. Brun, in No. 8, and one by Dr. Peter Kaatzer, in No. 11.

Dr. Brun has used the creosote during the last eight years in 1,700 cases of phthisis, some very bad, with remarkably good results. A sample case is as follows:

"Mr. S., chemist from S., came under my treatment July, 1886. He is thirty years of age. Originally he was a large strong man. He comes of a healthy family, and was well until November, 1885, when he became ill with a cough, expectoration, and the well-known phenomena of hectic. As a result his weight diminished

some forty pounds. Patient appeared very much emaciated, was very anæmic, with sharply defined red spots on the cheeks pulse 120 to 130 per minute. Continued fever, morning 38.4° (101.12° Fahr.), evening, 39.5° to $.7$ (103.1° to $.5$ Fahr.); night sweats; loss of appetite; inclination to diarrhœa. In the sputum are masses of bacilli. A local cavity the size of the fist and firm infiltration of the whole left upper lobe; right, slight dullness above and limited crepitant râle in the upper part of the apex. The prognosis seemed gloomy, and more that something might be done, creosote was given, on account of the existing diarrhœa, in pill form with opium.

"Almost contrary to expectation the appearance changed; the diarrhœa disappeared, the digestion became normal, appetite appeared, the nutrition improved, and the respiratory symptoms disappeared. Then the stronger form of creosote wine was ordered. It was borne, and was used during the treatment here for two months. At the end of this time the weight of the body had increased about fifteen pounds. The fever had lost its continued character, the temperature was normal in the morning, at evening it was 38.2° to 38.5° (100.8° to 101.3° Fahr.). Expectoration and cough had remarkably lessened. In the sputum bacilli appeared only rarely, and the board-like dullness had considerably cleared up, the cavity decreased, the secretion within it diminished.

"Patient left Lippspringe with instructions to continue the use of the creosote wine during the winter, and in the spring return here. This occurred, and the reports received every month continued favorable. Some weeks after the return home the fever entirely disappeared without further assistance and the patient became so strong that he was able to resume his duties as chemist of a sugar manufactory.

"In June, 1887, he came back and exhibited a picture of health. The body-weight was greater than before the illness, cough and expectoration only in the morn-

ing, in a minimum degree, no dyspnœa, bacilli entirely gone. Signs of a cavity could no longer be detected within the boundary of contraction of the left apex. It was difficult to awake, in the vigorous man, the consciousness of the necessity of further precautions."

A second case is given of a patient from a tuberculous ancestry, who had for many years suffered from catarrh of the respiratory organs. After a pneumonia, gangrene occurred in the lungs, with the usual constitutional disturbances. The creosote was given, and was followed by restoration to a condition quite as good as that before his illness.

The maximum dose of creosote which Dr. Brun uses is from 0.4 to 0.45 in a day. He insists on the necessity of using that prepared from beech tar.* The improvement corresponds with the amount which the patient is able to take. The form which he prefers is creosote wine, his formula being "Creosote fagen 13.0, T. A. gentian 30, spirit. vin. rectific. 250, vin. Tokayens q. s. ad. colat. 1000. S.—One tablespoonful to be taken three times daily, diluted with water."

The medicine is usually well borne, the worst thing about it being the pungent, disagreeable taste. Patients, however, usually soon become accustomed to this and do not mind it.

He has also used the "Ruess-Sommerbrodt's" capsules of tolu balsam 0.2, and creosote 0.05, but does not like them so well on account of their liability to derange the stomach.

When there is tendency to diarrhœa he uses the creosote in pill form with opium, "Creosote fag. 2 to 2.5, op. 0.3 to 0.4: 50. S.—One pill to be taken every three hours." With this treatment the diarrhœa usually stops promptly. Then he begins with the creosote wine.

Along with this treatment he usually employs creosote inhalations. For this pur-

* It should be borne in mind that ordinary commercial creosote is only carbolic acid, probably impure, and is not fit for internal use.—L. C.

pose he recommends Feldbausch's nasal inspirator. "This consists of two small tubes one and a half to two centimetres long, designed for each nostril. These are connected by a semi-circular middle piece. The interior contains filter paper upon which the creosote is dropped. While in use the tubes are placed entirely within the nasal canal so as to be scarcely perceptible to a second person. The irritation of the interior of the nasal cavity by the application is insignificant, and after several introductions is scarcely perceptible, so that the little apparatus may be used during any sort of occupation by day, and even throughout the night."

Dr. Kaatzer has treated somewhat more than a hundred and sixty cases with creosote. He considers that more than 10 per cent. of these have perfectly recovered. He has made repeated examinations of the sputum in each of these cases, at considerable intervals, without finding any bacilli or remains of elastic tissue.

"In 40 per cent. of my patients there occurs, during long treatment by creosote, if not recovery, still, such improvement that they are enabled to resume their occupations, which had been given up, and could work again with a feeling of renewed vigor. Among these is worth mentioning a bookkeeper. Along with bacillary lung phthisis, he suffered with bacillary otitis, on account of which a well-known authority was consulted. The patient mentioned came under my treatment in the summer of 1885. According to the account of the before-mentioned university teacher, no case of this affection that had come under his observation had lived more than a year. The unfavorable prognosis was not fulfilled. On the other hand, the number of bacilli in the sputum in the summer of 1887 was, by repeated investigation, very scanty—an average of one bacillus in several fields of the microscope. Patient had, besides, with the exception of a nine weeks' furlough, which he has spent every year in Bad Rehbürg under my immediate supervision,

fulfilled perfectly the trying duties of his occupation."

The formula used by Dr. Kaatzer is:

R.

Creosote puressimi e fag.....	2.0
Spts. vini rectific.....	30.0
Tr. gentian.....	
Ext. coffea ana.....	10.0
Aq. dest.....	100.0

S.—To be well shaken. A tablespoonful three times a day in half a cup of milk."

He is not sure but it would be better to take the same daily quantity in smaller doses from four to six times a day rather than the larger doses three times a day.

ALANINATE OF MERCURY; A NEW ANTISYPHILITIC.

Schmiedeberg's suggestion, in his *Compendium der Pharmacologie*, that combinations of mercuric oxide, with certain amidic acids of the fatty series (acetamidine, glycocollamine, as paragine) should act well in the treatment of syphilis, and the fact that these preparations have the advantage of being very soluble and easily absorbed, induced Dr. R. DE LUCA, assistant in the clinic of Professor Ferrari in the University of Catania, to make some experiments with mercuric alanine in the treatment of syphilis, and these he has now published. Preliminary experiments on animals (rabbits, Guinea-pigs, and dogs) showed that the drug was not very poisonous.

The alaninate of mercury used was prepared in the following manner: One part of alanine was dissolved in twenty parts of distilled water, which was then gradually raised to the boiling point; while the liquid was boiling it was poured over a small quantity of mercuric oxide (HgO) until it was all dissolved. Then the liquid was filtered and evaporated, and the residue crystalized, and a whitish substance, mercuric alanine, was obtained, which under the microscope showed the characteristic needle-shaped crystals grouped in crosses

and tufts. When thus prepared alaninate of mercury is soluble in three volumes of cold distilled water; this aqueous solution is perfectly colorless, clear, is changed neither by exposure to the air nor to light, and will keep indefinitely. In dilute solution it will not coagulate albumen; in concentrated solution its coagulating action is limited to its causing a cloudiness of that part of the liquid with which it comes immediately in contact. In other respects it has the general properties of other salts of mercury.

On his patients De Luca used the drug in three different solutions of 4, 8, and 10 milligrammes, to 1 ccm. of distilled water, (gr. 1-16, 1-8, and 1-6, to 16 m.), both for internal use and for injections, subcutaneous or intermuscular. The drug was used by injection in twenty cases; nineteen cured and one improved. The daily quantity used on each patient (all adults) was from five to ten milligrammes. The average number of days of treatment for each patient was 37.05; average number of injections to each patient, 27.7; average age of patients, 23.2 years. In the case that improved but was not cured, the patient stopped treatment. All the cases were those of secondary syphilitic lesions. Each patient received an average quantity of 228 milligrammes (gr. 3.5). Only three times did suppuration occur at the site of injection. As regards the duration of treatment, then, it is seen that mercuric alanine has some advantage over the bichloride; as to the quantity to be used it has a decided advantage, the quantities being as 22.8 to 42. With regard to the efficacy of the alaninate, in twelve cases (out of the twenty) that could be seen to ascertain if any recurrence had taken place, there was only one case of recurrence, in a case of syphilitic papule of the larynx. From this it seems that the alaninate gives more permanent results than other mercurial preparations. Further, in not a single case in which the drug was used by injection was there any stomatitis or other unpleasant effect produced.

From a tabulated statement of twenty cases treated by the internal use of the drug, it is seen that for the cure of ten adults with secondary syphilitic lesions, there was an average of 45.4 days and 641 milligrammes to each patient. Of ten children treated one died on the third day. For the cure of the remaining nine, of an average age of 7.4 months, with hereditary or acquired syphilis, each required an average of 54.6 days, and 159 milligrammes of the drug. Of the nine cured six were seen in from eight to nine months after treatment was stopped, and there was no recurrence in any one of them. There was not a case of stomatitis, and only one case of intolerance of the drug, which was completely controlled by the administration of cocaine. Regarding the internal use of the alaninate, then, it is not to be preferred to the tannate or the phenate of mercury in the opinion of De Luca, but the easy tolerance of the drug, and the excellent manner in which it acts on syphilis in infants, make it an important addition to the list of anti-syphilitics. The child that died was only two months old, and was in a desperate condition when it came under treatment. De Luca claims that the decidedly calmative effect of the drug gives especially happy results in children.

The author thinks that the drug is worthy of confidence, and that time may prove that it will give good results in the late manifestations of syphilis.—*La Riforma Medica*, March 22 and 23, 1888.

THE EXCISION AND SCRAPING OF CARBUNCLE.

MR. RUSHTON PARKER, of Liverpool, says that there are few procedures in practical surgery that better deserve recommendation than the local extirpation of carbuncle, of which the pain and tenderness are thereby ended, and the state of gangrene, always virulent and sometimes inveterately spreading, replaced by simple inflammation in a healing sore. If the carbuncle be small enough, or seen early enough, an

abortive treatment may be sometimes practicable by syringing through it an effective antiseptic liquid; but we seldom get such a good chance of doing this in carbuncle as in boil. He has several times arrested a boil in its early commencement, when little more than a pustule in a hair-follicle, by injecting strong carbolic or sublimate solution a few times, at short intervals, with a hypodermic syringe. But the manipulation necessary for this, even in a small carbuncle, is at least as painful and as prolonged as the excision of the virulent centre (or centres), and not appreciably more saving of tissue. The effect of excision is an immediate end to the very acute painfulness, and a gradual but sure end to the constitutional disturbance. The carbuncle may require erosion or excision, or both, according to the density of the inflamed tissues. Mr. Parker gives five cases, some of which may be quoted here:

CASE 1.—Girl, aged 19 years, with an acute brawny inflammation of the left side of the chin, of four days' duration. Under chloroform an incision was made, and the nodule inspected within, as there was a question of malignant pustule. The tissues in the centre were gray and purple, and the nodule was decided to be a carbuncle. A conical piece was excised, pure carbolic acid put into the wound, with a sublimate dressing laid on. The inflammation melted rapidly away, day by day, and the girl was entirely well in a fortnight. Here the best practicable form of immediate local extirpation seemed to be excision with a sharp knife, on account of the density of the tissues. The virulent centre was about the size of a pea, yet the collateral swelling was as big as half a walnut.

CASE 2.—A night-soil carter, aged 23, had a pimple on his neck. This he picked, and on the second day after his neck began to swell, and his head to ache intensely. On the fourth day he came to the Liverpool Royal Infirmary, with the left side of his neck in a swollen, red, angry state, very much like malignant pustule; his tempera-

ture was 104°. Excision of the centre, dirty-gray and purplish, with some surrounding skin, was done without an anæsthetic shortly after his admission. Pure carbolic acid was put in, and sublimate dressings applied. Temperature 105° in the evening, but fell to 100° during the night. Temperature remained above 100° until the third day after admission. On clinical grounds the case was regarded as a mild form of malignant pustule, but as neither the juice of the excised fragment nor the patient's blood nor urine showed bacilli under the microscope, the case is now considered to have been one of carbuncle with unusually severe symptoms, presumably due to ptomaine poisoning.

In a case of carbuncle on the back of the neck, a crucial incision was made under chloroform, and most of the carbuncular tissue being soft and pulpy, it was removed by means of the sharp spoon. The bleeding was abundant, but was controlled with hot water and pressure with sponges. The patient became perfectly comfortable, and made a good recovery under dressings of sublimate and eucalyptus ointment.

The use of pure carbolic acid has the advantage that the acid produces local anæsthesia in addition to its antiseptic qualities—*British Medical Journal*, March 31, 1888.

THE PRESENT STATE OF CARDIAC THERAPEUTICS.

Dr. JAMES STEWART has an excellent article on this subject in the *Canada Medical and Surgical Journal*, February, 1888. In speaking of the treatment of acute inflammations of the endocardium he points out the great value of rest, which means low blood-pressure, and consequently less work for the valves to do. The rest may be aided by drugs that lower blood-pressure, such as chloral. He does not approve of blood-letting and blisters over the præcordia, because the latter is injurious, and the former of only temporary benefit. Of the treatment of heart diseases during the pe-

riod of compensation he speaks favorably of Oertel's plan, which consists in strengthening the muscular system, including the heart, by regular and graduated outdoor exercise; aiding nutrition by a diet rich in albumen, and by careful regulation of the quantity of fluids taken. This plan is probably adapted to cases of threatened cardiac failure from beginning fatty degeneration and from chest deformity or pulmonary disease. When there is such loss of compensation as to render exercise impossible, then digitalis is of great value. The first marked effect of cardiac failure is diminution of the aortic blood-pressure, which is shown by a diminished excretion of urea. It is safe to continue the administration of digitalis so long as it causes an increase in the quantity of urine excreted. The diuretic power of digitalis is dependent entirely on its power of raising an abnormally low blood-pressure, and in order to do this it must be given in full doses. If, after being increased by digitalis, the urine diminishes considerably, the drug should be discontinued immediately; and this decrease is a warning that should never be neglected. There is a great difference in the quantity of digitalis necessary to cause diuresis, since patients differ greatly in their susceptibility to it. In the majority of cases 40 minims of the tincture, given four times a day for three days, will cause the diminution, but sometimes so much as half an ounce in divided doses is required.

The best results are obtained in these cases by absolute rest in bed, with full doses of digitalis. Scillain, helleborein, eleanthin, adonidin, convallamarin, and strophanthin also increase the blood-pressure and slow the heart. Mercury is a direct diuretic; hence the value of the old combination of digitalis, squills, and mercury. Dr. Stewart speaks hopefully of strophanthin, and favorably of the effect of caffeine, especially of the natro-salicylate of caffeine, which is a powerful direct diuretic acting on the epithelium of the convoluted tubules, and probably on that of the glomer-

uli. It acts promptly. Good results may be had from a combination of digitalis and caffeine.

WOUND OF THE LEFT VENTRICLE; RECOVERY.

Dr. A. P. KIAWKOFF reports the remarkable case of a Cossack, who received a wound from a dagger in the left side of his chest. A physician saw the patient almost immediately, and found him lying on the ground, unconscious, and with stertorous breathing. The man's chest was covered with blood, and in the fourth intercostal space, in the mammillary line, and parallel with the border of the ribs, was a wound about 1.5 inches long from which blood was still flowing. The wound was cleansed, a compress put on, and restoratives applied, after which the patient became conscious. On the next day his general condition was very good; pulse 90 and small, temperature 37.8 C. Examination of the chest showed the upper boundary of cardiac dullness in the fourth intercostal space, and the cardiac impulse was faulty. The lower percussion boundary was at the upper border of the seventh rib. The right boundary reached beyond the right parasternal line, and the left boundary about three centimetres beyond the left mammillary line.

On the third day the patient was taken to a hospital, which he left after a stay of four weeks, cured. Five days after leaving the hospital he suddenly dropped dead while trying to lift a heavy object.

The autopsy showed that the heart wound was completely closed, and the outer layer of the pericardium adherent to the wall of the thorax. The pericardium was filled with dark blood; in the left ventricle was a gaping wound, 1.4 centimetres long, the edges of which were thickened, and the neighboring muscular tissue in a state of fatty degeneration; there was also acute endocarditis.

The case, then, was one of healed wound of the left ventricle, but the patient died from too early strain on his weakened heart.

The cicatrix was too young, and the endocarditis had not passed off. The heart could not stand the strain of the sudden inrush of blood, and the cicatrix ruptured. This case makes 7 per cent. of recoveries of recorded cases of heart wound.—*Centralblatt für Chirurgie*, No. 12, 1888.

CYSTIC TUMOR OF THE LARYNX.

Dr. C. M. DESVERNINE, of Havana, reports a case of this rare affection. It was the case of a man, aged 70 years, a Cuban, who came under Desvernine's treatment for chronic hoarseness and symptoms referable to the digestive organs; intense epigastric pain, paroxysmal, and regurgitation of food within a few minutes after eating. The man knew nothing of his family history, but he was neither alcoholic nor syphilitic. He had dysphagia from organic (cancerous) stricture of the œsophagus at its lower third, and there was typical bilateral dysphonia. Laryngoscopic examination showed that the organ was normal in all its parts except the right vocal cord, the middle third of which was so enlarged as to present a general fusiform appearance. Its bilateral movements were correctly performed, abduction and adduction being full, complete, and energetic. General tension, on the contrary, was *nil*. During efforts at vocalization the appearance of the cord was not changed, and during the utterance of liquid sounds the corresponding arytenoid was dragged and forcibly inclined towards the centre of the larynx. The color of the cord was a faded white, reflecting less light than the other. It was most probable that the cord was invaded by a dense and inelastic product, and the diagnosis of interstitial fibroma and diffuse chondritis was made.

The patient died of the carcinomatous infiltration of the œsophagus. Direct laryngeal inspection showed the same appearance as the ante-mortem examination. The fusiform enlargement occupied the anterior part of the middle third of the cord, and measured 6 mm. in its greatest diameter.

It fluctuated on pressure, and a few drops of a clear mucoid liquid escaped. In the cord was a cavity measuring 5 mm. in transverse diameter, and 3.5 mm. vertically.

There is up to this time, says the author, no complete histological record of such a tumor, and he promises the results of the histological examination of this case at an early date.—*Cronica Médico-Quirúrgica de la Habana*, March, 1888.

HAIR-TUMOR OF THE STOMACH; GASTROTOMY; RECOVERY.

JOHN BERG reports the case of a married woman, age 26, who had suffered for three years with symptoms of dyspepsia and anæmia, and with attacks of vomiting of glairy mucus. For two years a tumor had been noticed in the epigastric region, and it had grown more rapidly during the past six months. She entered the Seraphim Hospital in Stockholm on May 31, 1887. In the epigastric and left hypochondriac regions, between the prolongation of the parasternal line and the left mammillary line was a tumor as large as the hand, with a concave upper and a convex lower border. It could not be displaced towards the region of the kidney. The spleen was in its normal position. Laparotomy showed that the tumor was in the stomach, which was opened by an incision six or eight centimetres long, parallel to the greater curvature. The tumor was composed of hair, short and long, forcibly compressed. It was cut up and removed piecemeal. The tumor weighed about 900 grammes. The wound was closed by 23 sutures, in a double row. Union occurred by first intention, and complete recovery ensued. The mother of the woman said that when she was about three years old she was in the habit of chewing and swallowing hair, but the patient denied having done so since she could remember. With the cases of Schonborn and Knowsley Thornton, this makes three cases of this operation, all successful, for hair-tumor.—*Nordiskt Medicinskt Arkiv*, Bd. 19, No. 25.

CALOMEL IN PHAGEDÆNA.

Surgeon-Major T. J. GALLWEY, at New-castle, Jamaica, writes to the *British Medical Journal*, of March 31, 1888:

I had a case of phagedænic ulceration of the under surface of the glans penis under my charge last August, which defied the recognized treatments of this disease. I applied nitric acid in the most thorough manner on six different occasions during a period of eighteen days without success. I then applied pure carbolic acid, but the disease again returned. Constitutional treatment with opium was adopted throughout. For six days the patient sat in a hot-water hip-bath on an average about four hours daily, without any appreciable effect on the course of the disease. The condition of the penis on the twenty-first day was as follows:

A large ulcer existed, covering the entire under surface of the glans, molding it like the mouth-piece of a flute, and extending to the reflected foreskin in the vicinity of the ulcer. A third of the glans had been destroyed. The surface of the ulcer was covered with a reddish grey secretion, irregularly disposed, and pierced here and there by large red granulations. The edges were angry and undermined.

I applied calomel powder on the twenty-first day of the disease, spreading it thickly, and pressing it well into the interstices of the ulcer. The calomel acted like magic; the ulcer began to heal rapidly. Now and then a suspicious spot appeared, but it was at once dissipated by a thorough application of the calomel. The patient made an excellent recovery, and was very pleased at the result, for he believed he was going to lose the whole affair. I was tempted to use calomel, as I had found it very useful in all forms of syphilitic ulceration.

THE VALUE OF IODOL.

Dr. ASSAKY has made a number of experiments to determine the value of this compound. It should be a yellow-brownish powder, inodorous when recently pre-

pared, almost insoluble in water, soluble in alcohol, ether, fatty oils, and crystallizable acetic acid, and should contain from 85 to 89 per centum of iodine.

In Assaky's hands, operation wounds that were dusted over with iodol healed by primary union. In sloughing and suppurating wounds it proved an excellent antiseptic, rapidly drying up all purulent secretion. Since it is not toxic it may be used in large quantity without inconvenience. Assaky claims that it is highly probable that it destroys pyogenic organisms. It gives excellent results when used in and on wounds having a tendency to ulcerate, and transforms them in a short time into freshly granulating surfaces. While it is a good dressing for indurated chancres, it gives variable results when used on soft chancres.

When taken internally, in doses of from 40 centigrammes to 2 grammes a day, it does not cause functional troubles, even when continued for a long time. It causes slight congestion of the nasal and conjunctival mucous membranes, but this disappears when large doses are taken. It does not cause albuminuria, but, on the contrary, it has perhaps a curative action in some cases of albuminuria. It has given good results in tertiary syphilitic affections, and in surgical scrofuloses, acting more rapidly than the alkaline iodides.

It may be used in powder, in a glycerol-alcoholic solution, in gauze or iodolated collodion, in ethereal solution, or it may be incorporated with vaseline or lanolin.—*L'Union Médicale*, March 18, 1888.

MUSHROOM-POISONING.

Dr. Matthes, in the *Berliner Klinische Wochenschrift*, No. 6, reports five cases of poisoning by mushrooms, including one nursing child. In all these cases the symptoms were alike. When first seen the patients were delirious, as though from alcohol. The face was cold and pale, lips bluish, respiration superficial and very frequent, pulse slow and interrupted, pupils wide and without reaction to light. The

treatment was emetics and purgatives and hypodermic injections of ether.

Soon tonic spasms occurred, which were made specially noticeable by the ether injections. They also occurred on shaking the bed, or by throwing a bright light in the face, and, even, spontaneously. The convulsions were repeated at intervals of eight to ten minutes, and lasted about two hours. At one time there appeared to be danger of heart failure, and the doctor contemplated hypodermic injections of strychnine, but was deterred by the fear of complaints, in case of a fatal result.

Pieces of the common fly mushroom (*Amantia rubesens*), along with other edible mushrooms, were found in the vomited matter.

The first symptoms occurred three and a half to four hours after eating. They were described by one of the patients as severe gastralgia, followed by symptoms like alcoholic intoxication. The next morning the patients were in a fair condition, only suffering with a disagreeable feeling in the head.

The special interest in the case is the convulsions, which are not common.

LESTER CURTIS.

MENSTRUATION FROM A LAPAROTOMY SCAR.

Professor GEORGE E. REIN recently exhibited to the Obstetrical and Gynaecological Society of Kew a menstruating woman, upon whom he operated about three years ago for a large cyst of the right ovary, the pedicle being fixed in the abdominal wound. The patient made a good recovery, and the wound healed entirely except that at one part of the scar there remained a very small slough, which fell off just before the occurrence of menstruation, after which there was a constant flow of blood from the denuded surface during the whole of the menstrual period. This had occurred regularly every month since the woman recovered, the scar usually beginning to bleed a little earlier than the

uterine flow appears. The blood from the cicatrix has the characteristic menstrual odor. It is possible that a Fallopian tube or one of the cornua of the uterus was stitched into the abdominal wound with the pedicle. As Professor Rein will have to perform a second operation soon for disease of the left ovary, he hopes to discover the cause of this rare and very interesting occurrence.—*Vratch*, February 18, 1888.

SEPTICÆMIA AND PUERPERAL THROMBOSIS.

FATTY HEART; TREATMENT BY MASSAGE, SPARTEINE, AND EXERCISE; RECOVERY.

Dr. D. ANTONIO PEÑAFIEL, of Mexico, reports an interesting case under the above title. The massage was applied to the œdema caused by the thrombosis. He believes massage and mechanical exercise was a very important part of his treatment. The sparteine was given in daily doses of from one milligramme to one centigramme, and it had an almost immediate effect upon the heart. It increased the quantity of urine without causing the inconveniences seen in the administration of other diuretics, and without showing any cumulative action. The diet in this case was almost exclusively of milk. The case was not one of classic Stokes' fatty degeneration, the diminution of cardiac force being neither permanent nor uniform. There were no cerebral symptoms, and no disturbance of respiration in consequence of left ventricular weakness. The heart was rather in a state of obesity than of fatty degeneration.—*Gaceta de Médica de Mexico*, Tom. 23, Ent. 5.

TRANSPLANTATION OF THE CORNEA.

VON HIPPEL reports two cases of successful transplantation of the cornea of the Guinea-pig, in leucoma, in which Descemet's membrane was not involved. In one case the central leucoma was removed by

means of a specially constructed trephine of a diameter of about four mm., up to the membrane of Descemet. A piece of the cornea of a Guinea-pig the size of the piece removed from the human eye was transplanted. This healed readily and remained transparent. One of the patients who could before the operation only count fingers a two metres, regained sight up to 20-200. The second case was one in which a central leucoma remained after ulcer serpens. In this case a piece of cornea four mm. in diameter was transplanted in the same manner, and with equally good results.—*Centralbl. für die medicinischen Wissenschaften*, January 28, 1888.

NEW METHOD OF REDUCING STRANGULATED INGUINAL HERNIA.

G. S. PERRO reports a series of successes with the following method:

After the pelvis has been raised on a pillow, and the thigh flexed and abducted, the operator grasps the scrotum and the hernial tumor, bends it slightly over and against the wall of the abdomen, and presses upon it in such a manner that the index finger of the right hand is carried into the inguinal canal, and in the direction of the horizontal ramus of the pubis by a turning and boring motion. In a short time the strangulated part slips back into the abdomen, and the other part of the hernia follows. By this method Perro has succeeded in reducing six cases of strangulated hernia after his colleagues had spent from twelve to thirty hours in vain attempts at reduction.—*Centralblatt für Chirurgie*, November 12, 1888.

DOMESTIC CORRESPONDENCE.

TO THE EDITOR: Recent issues of many medical journals contain complaints from medical editors and contributors of the over-crowded condition of the profession, and of the continued annual addition of

numerous graduates from the colleges increasing the plethora. "Diploma Mills," "Diploma-mill Professors," and other uncomplimentary terms are indulged in to designate, seemingly, all medical colleges and all medical teachers.

It is not the purpose of this article to combat these complaints, for it is quite universally conceded that the medical profession is over-crowded; that the mode of teaching in many colleges is lax, and the time of study too short in nearly all medical colleges; and that too many are annually graduated and licensed by the diplomas they hold to at once practice medicine. It is true, too, that many students are received in some colleges who are, by reason of a lack of even a reasonable knowledge of English, quite unprepared to study medicine. But will this condition of affairs be removed, or even improved, by the methods of attack mentioned above?

It seems improbable as long as a diploma alone is accepted as entitling the holder of it to practice, or it is accepted by the licensing board of a State as sufficient evidence of qualification. Minnesota has fairly indicated what should be done. The licensing power of that State is a State Board of Medical Examiners, the members of which are not connected in any way with a medical college.

This board requires of all who desire to begin the practice of medicine in the State, a satisfactory examination in medicine and surgery. Only those are eligible to such an examination who have studied medicine for three years, during which time they must have attended *three annual* courses of lectures of *at least* six months each. A similar law regulates the practice of medicine in California. A few other States have laws which in some measure approach that of Minnesota, but which are still faulty. Our own State Board of Health has done much to elevate the standard of medical education in Illinois; but we need an examining board similar to that of Minneso-

ta. No so-called school of medicine should be recognized. No one connected in any way with a medical college should be eligible to membership on the board. The requirements of eligibility to these examinations should be not less than in Minnesota—that is, not less than three years of study—which should include attendance upon three annual courses of lectures of not less than six months each, in a college which requires and enforces a good English education and accompanying mental discipline, preliminary to the study of medicine. With such requirements from every man the prospect of elevating the standard of medical education and requirement will be materially increased.

The difficulties in the way of securing a diploma, and with it a license to practice, will be so increased that fewer men will attempt it—the ones least prepared to study will drop out. A diminution in the number of students will necessarily close such colleges as depend for support upon those who study medicine because a diploma is easily secured. There are colleges which will support, and aid in securing, this needed reform. Let the general profession take the initiative step at once in local and State societies. If a draft of a bill be agreed upon and the influence of the physicians in the State be brought to bear on their representatives in the legislature, desired legislation may be secured.

We have indicated the outlines of the only method of reform in medical education. As occasion requires we shall discuss the subject more minutely. We ask those members of the profession, and especially our medical contemporaries, who have spent their efforts in vainly decrying medical colleges and medical college professors, to join with us in securing needed reform. And one of the most effective means to that end would make all medical colleges simply teaching bodies, granting no diplomas which should imply a right to practice medicine.

235 STATE STREET.

FRANK BILLINGS.

BOOK-REVIEWS.

- (I.) DISEASES OF THE SKIN. A MANUAL for Practitioners and Students. By W. Allan Jamieson, M. D., F. R. C. P. Ed., etc. Edinburgh: Young J. Pentland. Philadelphia: J. B. Lippincott Co. 1888.
- (II.) DERMATITIS VENENATA. AN ACCOUNT of the Action of External Irritants upon the Skin. By James C. White, M. D., etc. Boston: Damrell & Upham. 1888.
- (III.) A PRACTICAL TREATISE ON DISEASES of the Skin. By John V. Shoemaker, A. M., M. D., etc. New York: D. Appleton & Co. 1888.

(I.) The author of this volume has earned for himself a deserved reputation in the field of dermatological literature by his editorial supervision, for a number of years past, of the *Periscope of Diseases of the Skin*, in the now venerable and always valuable *Edinburgh Medical Journal*. He has also from time to time made contributions of note to general medical literature in connection with the same subject. He is a careful writer, a close observer, an indefatigable student, and easily second of the recognized Scottish writers in cutaneous medicine.

That he has the courage of his convictions is shown by the significant fact that in the twelve-month which has recorded the issue from the press of the large and comprehensive treatise on diseases of the skin written by his Scotch colleague, Dr. McCall Anderson, of Glasgow, he has ventured to publish a work of similar scope. The present population of Edinburgh is less than 250,000, the town being in fact less populous than either San Francisco or Baltimore of American cities. It is, however, a town which has the unenviable notoriety of suffering from more than its share of cutaneous ailments, and in particular of surpassing in the frequency of occurrence of "the itch."

Dr. Jamieson's book is a clever and rather carefully written essay on the themes of which he treats, with certain defects which are only too apparent to the American reader. Among these may be mentioned, first, the conspicuous lack of a systematic arrangement of his several subjects, with separate chapters exclusively devoted to individual diseases, and the arrangement of the paragraphs devoted to each under the heads, pathology, etiology, etc.; second, the adoption of a scheme of classification devised by a single American writer, Dr. L. D. Bulkley, of New York, which has been adopted by no other author and no qualified body of men either at home or abroad; third, an acceptance of many of the doctrines proposed and sustained solely by Mr.

Jonathan Hutchinson, the eminent president of the Royal College of Surgeons in England.

This is not properly the occasion on which to discuss the special place which that distinguished gentleman has won for himself in the scientific pantheon. It is all that a large ambition might covet and a noble reputation fitly hold. As a surgeon; as an oculist, and as a dermatologist, he is equally expert, but it is to be laid to his charge that among living men there are few who have in their writings contributed more than he to that confusion in the mind of the average practitioner respecting diseases of the skin which has made dermatology the reproach of its sister sciences. His lack of system, his hasty enunciation of personal views which fail to receive support of observers of the same field in other countries when tested by the severe ordeal of extended personal experience, and his fondness for imitating the late Sir Erasmus Wilson in coining new phrases for the designation of well understood and properly classified phenomena, these are but a few of Mr. Hutchinson's scientific faults; and these are, it must be confessed, the lines in which Dr. Jamieson, when walking in the footsteps of the man he admires, has been occasionally diverted from the best course.

For example, our author, in discussing the subject of eczema, properly denies its contagiousness, but couples this with hints which look toward another possibility; for example, pointing out that an eczema sometimes spreads to regions whither its characteristic discharge has flowed. This is practically the doctrine of the old women in the nursery. It is true that an eczema occasionally extends to the parts whither its discharge has dropped down or flowed down; but it is also true not only that the patch may extend upward while the discharge is dropping downward over an unaffected and irresponsive integument, but also that the discharge is wholly incapable of acquiring any contagious quality in the only phases of eczema in which it is produced, viz., those of acute type, since it consists, for the larger part certainly, of the serum of the blood only, which traverses the swollen tissues with such rapidity as to be incapable of receiving from them any infective principle, were such present. If, as Jamieson states, it may by this means be "communicated to others in the same way," it is difficult to understand why the disease is not, at least, infectious, a fact denied by every writer of repute on the subject, and controverted by clinical experience the world over. The author, in this connection, credits Krock with the enunciation of the doctrine (in 1885), that new patches of disease on the skin of the eczematous patient are produced by a reflex along the trophic nerves, from the irritation set up in the patches of infiltration, where the disease originally appeared; but

long before this date, Kaposi formally enunciated the same obvious truth in his excellent treatise.

The author devotes many pages to a consideration of the various features of eczema and other different disorders (*e. g.* pityriasis maculata et circinata, pityriasis rosea), under the title of "Lichen," a name which, as dissociated from lichen pilaris, lichen scrofulosorum, lichen planus, and lichen ruber, is slowly dying out of the confusion from which the immortal Hebra was early to remove it. It is almost incredible that a modern author should thus revive its shadowy and unsubstantial ghost. Jamieson also, in connection with the curious disorder named above (pityriasis maculata et circinata, pityriasis rosea, of Bazin), neglects to credit an American writer of Chicago, who, in the *British Medical Journal* of last year, was first to point out to Dr. Jamieson and his colleagues that Wilson had probably observed this disease when he wrote some of his descriptions of lichen circumscripatus and lichen marginatus.

The author has occasionally permitted himself to lapse into a carelessness of expression which is scarcely to be looked for in a formal treatise designed for students and practitioners. Though properly describing "crusts" among the lesions of the skin, he repeatedly employs as a substitute for this the word "scab," a term describing rather the indefinite ideas of the dispensary patient than the exacter conceptions of the dispensary physician. On page 411, we find, "should baldness have shown symptoms, more energetic measures are needed," etc. Again, p. 26, "inflammation is set up at the roots and beneath the nails."

It would appear that the author is not familiar with the American method of employing the annealed jeweler's broach for the purpose of removing hairs by electrolysis, as he commends for this purpose the far inferior "diamond" cambric needle, an instrument altogether too unyielding for the production of what a distinguished American teacher of the art has described as the "catheterization" of the hair-follicle.

On the whole, Dr. Jamieson's work may be viewed as a fair compend of the knowledge generally had on the subjects of which he treats, with the special advantage to Scotch readers of informing them of what Americans are doing and have done in the field covered.

We may possibly deplore the fact that a great deal of our chaff has thus been spread abroad over the world; but can note with some pride that the day which sees this work issue from the Edinburgh press, is not that of the past in which every contribution made to scientific literature on this side the Atlantic was despised in Great Britain. What has wrought the change? Is it an indefinite advance

along the line, made by toilers and delvers in every department of science? This is the essential cause, but the major element of importance is the fact that right under the noses of the older writers in medicine, books by American authors are sold in Edinburgh, Glasgow, and London; studied by lay and professional readers alike; and are by no possibility any longer ignored by persons claiming to represent the best fruit of research in any department of medical science.

(II.) Professor White's essay on *Dermatitis Medicamentosa*, originally read as a paper before the American Dermatological Association, has grown into a book; and while it is not a large or a pretentious book, it is one of the very best kind offered to the library of the practitioner. For there are some books which contain facts good enough and valuable enough in themselves, but which may be found as well or more concisely set forth in another book or books upon the same shelf. Professor White's book is one of that precious order that contain facts nowhere so systematically explained as in its special pages. As a work of reference there is actually nothing to take its special and valuable place.

The action of external irritants upon the skin is so extensive and important, that its fullest exploration almost involves the study of human life from the moment it quits its sub-aqueous existence, to the hour when it ceases to respond to irritation of any kind. In a large sense, this might include all the diseases of the economy, and every source of variation from the standards of health of all the organs of the body. Professor White's treatise comprehends, however, more definitely the study of those dermatoses which originate in the direct action of externally applied irritants, whether of the animal, or vegetable, or mineral world, or of classes of matter less readily assigned to a special kingdom.

Few men are better fitted for such a task than our author. He is not only in reputation and position as a teacher the most venerable of American dermatologists, but is also an expert botanist, and one of the best comparative anatomists in the country. His knowledge is systematized to a degree rarely achieved by the most learned scientists of our day. He is, above all things, practical in the precepts which are suggested by his researches, and not without that cool disdain of ignorance and unsupported fact which is only equaled by his distrust of what is not demonstrable.

The chapters he has devoted to arsenical poisoning, resulting from the use of the metal in the ornamentation of articles for domestic purposes; on rhus poisoning; on the toxic effects of arnica when externally applied in certain cases, and on the bullous effluence occasionally encountered on the skins of newly-arrived immigrants, all exhibit the

evidences of careful, original observation in connection with subjects long associated with Professor White's name and authority.

In the section devoted to the *Solidago*, or *Golden Rod*, the author describes a mild form of dermatitis which he has observed upon the hands of those who have handled the plant; but with characteristic caution, he hesitates to pronounce absolutely upon the cause in the case of those who, having been gathering wild-flowers in the woods, are there exposed unwittingly to the "ubiquitous rhus." But there are many reasons for believing that the suspicions of the author are more than well-founded. Not only is the plant irritating to the skin, but a number of asthmatic subjects of both sexes positively declare that accesses of dyspnoea are brought on both by direct exposure to the plant in contact and also, by breathing the air of the road-ways alongside of which the plant is flowering. The relation occasionally observed between asthma and eczema in individuals of susceptible skin and mucous membranes, illustrates the fact that these organs protest at times with equal energy against influences which, in the mass of men and women, produce only the faintest temporary impression.

Dr. White's valuable book is warmly commended to every practitioner who has an interest in accumulating a good medical library for reference purposes; as also to the dermatologist, the practical physician, the botanist, and the naturalist.

III. A great contrast is exhibited between Professor White's original work in the treatise just considered, and the volume written by Dr. Shoemaker, with regard to which the author says: "All that I claim in it as especially original is a statement of the relative effects and values of numerous agents tested in my own many years of clinical experience in the treatment of skin diseases."

It would be only just, on the basis of this plea, to admit fully the claim put forward for his statement. It presumably refers to the eight pages devoted to the oleates as topical applications in cutaneous disorders, the notoriety to say nothing of the value of several of which constitutes the author's chief claim upon the professional public for attention. Some of these special articles, such as the mercuric and lead oleates, had a value and usefulness which were recognized before Dr. Shoemaker's "many years of clinical experience." With these few exceptions, there will be difficulty in establishing the fact that the others have won for themselves any substantial place in dermatological therapeutics.

For what else is contained in the book, the author, making no special claim for originality, may be properly credited with making a fair compilation from the published works of other writers. He

does not take the trouble to credit some of the gentlemen, who have written before, with what they have done. One might suppose that he would in his preface have acknowledged his indebtedness to the distinguished American author on dermatology, who is not only his professional colleague, but a resident of the same city in which Dr. Shoemaker resides. One could scarcely know from anything here set forth, that a considerable number of American dermatologists have been associated in the task of advancing the study of cutaneous medicine in this country by indefatigable work, have collated the only dermatological statistics worth consideration on this side of the Atlantic, and have contributed papers, edited journals, and written elaborate treatises in the special field which Dr. Shoemaker seeks to occupy for the purpose of "supplying the needs of the medical student and of the busy physician."

The result is that where the published text-books are defective, because not brought up to date, Dr. Shoemaker's pages, brought up to no later date, betray his failure to extend his studies into the fields where the later observers have been at work. For example, he devotes nine lines to a consideration of Duhring's "inflammatory fungoid neoplasm" under the head of sarcoma, exactly where the subject was left by Dr. Duhring when his last edition was issued from the press. But that distinguished author would scarcely think to-day, if revising the work he did so well in the past, of neglecting to separate all forms of sarcoma from the mycosis fungoides in whose lesions Auspitz and others have recognized micro-organisms. Even if not yet assuredly admitted to the separated and distinguished class of disorders where probably tuberculosis, lupus, syphilis, rhinoscleroma, and lepra have fixed themselves permanently, no writer can afford to-day to ignore the claim set forward to advance mycosis fungoides to this category. Yet the name does not even appear in Dr. Shoemaker's book. Nor, it may be mentioned in the same connection, could one gather from anything written in these pages, that there had even been a claim made that syphilis was entitled to such position; nor is it even hinted that a bacillus had ever strayed into the field of vision of a seeker for the essence of the potency of its venereal virus.

This is in truth the age of commercialism, in law, letters, society, and medicine. The work before us belongs to the commercial class of medical books. It contains nearly sixty pages of prescriptions for the relief of diseases of the skin. And while men and women believe that money is the chief end of man, perhaps they will continue to cling to the delusion which still smacks of the darkness of the middle ages, that a man can buy with money a prescription that will cure him of his skin disease.

Why not "touch" again for the King's Evil, and hang for witchcraft?

AN INDEX OF MATERIA MEDICA, WITH PRESCRIPTION WRITING, INCLUDING PRACTICAL EXERCISES. By CHARLES H. MAY, M. D., and CHARLES F. MASON, M. D. Pp. vi and 267. New York: William Wood & Company. 1887. Chicago: W. T. Keener.

This is the last addition to Wood's Pocket Manuals. The authors have had large experience in coaching students for examination, and state in the preface that they think the book is what is needed by students preparing for examinations. The first part consists in a list of the official and many non-official drugs, with their source and dose. This list is alphabetically arranged, and has occasional blank pages for additions. The part of the book which treats of prescription writing is well done.

QUESTIONS AND ANSWERS ON THE ESSENTIALS OF PHYSIOLOGY, PREPARED ESPECIALLY FOR STUDENTS OF MEDICINE. By H. A. HARE, B. Sc., M. D. (Univ. of Pa.). Pp. vi and 170. Philadelphia: W. B. Saunders. 1888.

The author is well aware of the disfavor with which such books as this are received by the profession, and says in its defense that the short period of study required as preliminary for examinations for the medical degree makes such books necessary. The selections have been intelligently made; the style is clear. The book is not, in any sense, a substitute for one of the regular text-books upon the subject treated, but may be of value in preparing for examinations.

OBSTETRIC SYNOPSIS. By JOHN S. STEWART, M. D. Pp. x and 202. Small 12mo. Philadelphia: F. A. Davis. 1888.

The fundamental objection to all books of the class to which this belongs is that they attempt what is impossible. Satisfactory discussion of the subject cannot be accomplished in the space allowed, and as books of ready reference, they can hardly be more useful than the larger complete works. So far as it is possible under the conditions, the author has done his work well in this case. A cut and description of the new Stewart forceps is given. At a recent meeting of the Philadelphia Obstetrical Society, this forceps was not favorably received.

SIX HUNDRED MEDICAL DON'TS; OR, THE PHYSICIAN'S UTILITY ADVANCED. By F. C. VALENTINE, M. D. New York: G. W. Dillingham. 1888.

It appears from the title page that the author has also published, among other volumes, one on "Central American Medical Curiosities," and the average

reader may fail to understand why this small one was not included in the larger work. However, the author has endeavored to write a book for the use of laymen, and one which he hopes will make them more reasonable and intelligent as patients. It contains 600 numbered paragraphs, each one of which begins with the word "Don't." The conception of the book is so fundamentally undignified, and its literary solecisms are so numerous, that it deserves emphatic adverse criticism.

ESSENTIALS OF CHEMISTRY AND TOXICOLOGY. FOR THE USE OF STUDENTS IN MEDICINE. By R. A. WITTHOUS, A. M., M. D. Second edition. 294 pages. Pocket size. New York: William Wood & Company.

This small work has already won a place in the library of the medical student, and in many instances it is the only work on chemistry with which he has any acquaintance.

Admitting that the use of such books is commendable, no exception can be taken to the present volume. It contains 1,053 questions, relating to those parts of chemistry chiefly interesting to the physician, and answers to the same, given in a clear and concise manner. Of books of its scope, it is undoubtedly among the best. But should the student be encouraged to use such manuals, which, of necessity, are almost devoid of one of the most valuable features of a scientific book, viz., systematic method, logically followed out?

The American medical student has his "essentials" of chemistry, anatomy, physiology, histology, and of half a dozen other things, but where, in all of these, does he find his scientific discipline?

A PRACTICAL TREATISE ON THE MEDICAL AND SURGICAL USES OF ELECTRICITY. By GEO. M. BEARD, A. M., M. D., and A. D. ROCKWELL, A. M., M. D. Sixth edition. Revised by A. D. Rockwell, M. D. 758 pages, with 196 illustrations. Large 8 vo. New York: Wm. Wood & Company. 1888. Chicago: W. T. Keener.

The first edition of this work was published seventeen years ago, and was, in many respects, a pioneer among books of this class. In that edition the authors refer to the many disadvantages under which they labored in the pursuit of their experimental investigations, and to the, perhaps, greater drawbacks which the reader would encounter in trying to follow them in the practical application of their results.

Although at that time several American instrument makers were furnishing electrical and other apparatus to the schools, very few were engaged in the manufacture of batteries and other electrical appliances suitable for the physician's practice.

Besides this, few, if any, of the medical schools were giving a course in general chemistry and electricity sufficiently extended to make the successful application of electricity to medicine by the average medical man practically possible. Much of the apparatus used in their earlier work was devised by the authors themselves.

In presenting their book to the public, they divided into four sections—*Electro-Physics*, *Electro-Physiology*, *Electro-Therapeutics*, and *Electro-Surgery*.

This division is maintained in the later editions. Sections three and four are, of course, mainly practical, and give in detail the experience of the authors and others in the application of electricity to the treatment of a great variety of cases. The recent advances in the use of the current in gynecology seem to be fully considered, as are also a large number of applications in the field of surgery. The illustrations and descriptions of new forms of apparatus are good. The first and second sections of the work are no less valuable than the two "practical" sections. These were written to supply the want of accurate information on the topics of *Electro-Physics* and *Electro-Physiology* in the medical literature of the time, and in the subsequent revisions they have been improved to keep abreast with later discoveries in those lines.

To understand and take advantage of all the possibilities of his batteries and coils, the physician must be conversant with a good many chapters of physics, as well as with physiology. The sections in question seem to cover the ground as fully as necessary. In the discussion of the measurement of strength of currents, a number of practical examples are given, which are certainly an aid to the beginner, and the statement of Ohm's law and its consequences, with application to electro-therapeutics, is scientifically accurate, yet easily understood.

On the whole, the work can be cordially recommended.

A MANUAL OF WEIGHTS AND MEASURES. By OSCAR OLDBERG, Ph. D. Second edition. Revised. Pages iii, 246. Chicago: W. T. Keener.

The first edition of this little work, issued three years ago, was, unfortunately, marred by a large number of typographical errors. These have been corrected fully in the present edition, to which, besides, some new matter has been added. As it now stands, the book possesses great practical value to pharmacists and physicians, as its information regarding weights and volumes of the various solutions employed in medicine is accurate and complete.

The origin and relations of the different systems of weights and measures employed by civilized nations is explained, and the discussion of the vexed

question of the metric system in medicine is considered from the standpoint of a man thoroughly conversant with all its phases.

I. ATLAS OF VENEREAL AND SKIN DISEASES. Comprising original contributions and selections from the works of Professor M. KAPOSI, of Vienna, Dr. J. HUTCHINSON, of London, Professor J. NEUMANN, of Vienna, etc. Edited by PRINCE A. MORROW, A. M., M. D., Clinical Professor of Venereal Diseases, etc. New York: William Wood & Company. 1888. Fasciculi, i, ii, iii, iv.

II. CLINICAL ATLAS OF VENEREAL AND SKIN DISEASES. Including Diagnosis, Prognosis, and Treatment. By Professor ROBERT W. TAYLOR, M. D. To be issued in eight parts, aggregating fifty-eight large chromo lithograph plates, measuring fourteen by eighteen inches, and containing about two hundred figures, many of them life-size, with selections from the works of Cullerier, Fox, Fournier, Hebra, etc. Philadelphia: Lea Brothers & Company. 1888.

The profession is to be congratulated upon the fact that the field of illustration of cutaneous and venereal diseases, so long neglected in this country, is at last well occupied by two men having the distinguished ability and reputation of Professors Taylor and Morrow. The advanced plates furnished, of each of these atlases, are equally good, both in execution and in fidelity to nature; and are of an excellence so nearly attaining the same standard that it would be invidious to make distinctions between them. Both authors have a large clinical experience, and both, when selecting subjects for illustration outside of that experience, have, for the most part, turned to the same excellent sources, viz., the published plates of such eminent dermatologists and syphilographers as Hutchinson, Kaposi, Fournier, Neumann, and Ricord.

We can cordially recommend these admirable illustrations of disease to the general practitioner and student, as well as to the special investigator of the branches illustrated.

IRREGULARITIES OF THE TEETH, AND THEIR TREATMENT. By EUGENE S. TALBOT, M. D., D.D.S., Professor of Dental Surgery in the Woman's Medical College, and Lecturer on Dental Pathology and Surgery in Rush Medical College, Chicago. With 152 illustrations. Octavo, pp. 163. Philadelphia: P. Blakiston, Son & Co. 1888.

This book is an epitome of the latest and most advanced ideas in relation to the causes and treatment of irregularities of the teeth, with illustrations of the appliances invented by the author and those

of Drs. Patrick, Farrar, Coffin, Guilford, Byrnes, Kingsley, Allan, Richardson, Matteson, Magill and others. It contains 163 pages and 152 illustrations. Many of the latter are entirely new, the greater number of which belong to the peculiarities of arrangement of the teeth.

The author has divided his book into two parts; the first being devoted to a description of the anatomy of the maxillæ and the teeth and their normal relationship; the etiology of dental irregularities, acquired, hereditary and accidental; and a brief consideration of the causes of irregularities of the teeth in idiots.

The second deals with the treatment of the various forms of irregularities and the construction and adaptation of appliances for special as well as the more common cases, and will on this account be found of great value to both practitioners and students.

Dr. Talbot is to be congratulated upon the careful manner in which he has gathered together so many valuable principles and condensed them into so small a compass.

The book is well indexed and the publishers seem to have spared no pains in performing their part of the work. J. S. M.

PAMPHLETS RECEIVED.

Transactions of the American Dermatological Association. Eleventh Annual Meeting, 1887.

Syphilis of the Endometrium. By T. A. Ashley, M. D.

The Galvano-Cautery Sound and its Application. Especially in Hypertrophy of the Prostate. By Robert Newman, M. D.

Synopsis of the Second Hundred Cases of Urethral Stricture, Treated by Electrolysis, with cases. By Robert Newman, M. D.

The Use of the Curette for the Relief of Hæmorrhage Due to Uterine Fibroids. By Henry C. Coe, M. D.

The Significance of Localization of Pain in Pelvic Disease. By Henry C. Coe, M. D.

Dangers in Gasoline. By John H. Kellogg, M. D.

First Quarterly Report of the Michigan State Laboratory of Hygiene. By Victor C. Vaughan, M.D., Ph. D.

The New York Medical Journal Visiting-List and Complete Pocket Account Book.

The Cure of Hernia. By Henry O. Marcy, A. M., M. D., LL. D.

Cystitis in the Female. By Henry O. Marcy, A. M., M. D., LL. D.

On the Use of the Vaginal Tampon in the Treatment of Certain Effects Following Pelvic Inflammations. By Thomas Addis Emmet, M. D.

Results of Observation in the Treatment of 2,072 Cases of Lateral Curvature of the Spine. By James Knight, M. D.

A Very Valuable Lesson for Those who Use Anæsthetics. By Julian J. Chisholm, M. D.

Are Dipsomania, Kleptomania, Pyromania, etc., Varied Forms of Mental Disease? By Orpheus Evarts, M. D.

The Lamb Prize Essays:

No. 1. Healthy Homes and Foods for the Working Classes. By Victor C. Vaughan, M. D., Ph. D.

No. 2. The Sanitary Conditions and Necessities of School-Houses and School-Life. By D. F. Lincoln, M. D.

No. 3. Disinfection and Individual Prophylaxis Against Infectious Diseases. By George M. Sternberg, M. D.

No. 4. The Preventable Causes of Disease, Injury, and Death in American Manufactories and Workshops, etc. By George H. Ireland.

MISCELLANEOUS.

The *Philadelphia Medical Times* says, in regard to substitution and adulteration, it must be admitted that in numerous cases the charge is a true one, and the evil is of growing dimensions. With the reduction in the margin of profits caused by the fierce business competition of the present day comes the temptation to adulterate, or substitute inferior quality. No condemnation can be too severe for the man who thus trifles with human life; and if he cannot carry on his business honestly, he had better abandon it and seek some other occupation.

Again, the outcry is made that the physician is too apt to prescribe various remedies, more or less proprietary in character, put up by large manufacturing concerns and introduced by skilled advertising, and thus require the druggist to carry an endless variety of such articles in stock, many of which are seldom or only once called for, and thus remain a dead loss to the proprietor. But is the physician much to blame? True, he is sometimes imposed upon by the bland and suave canvasser, and the glowing printed indorsements of his professional brethren in favor of some new remedy—*vide* stenocarpine. But when

he sees remedies in convenient and compact shape, of appearance much more elegant than those he can procure from the corner druggist, and of at least equal efficacy, is it to be wondered that he should prefer X., Y., or Z.'s manufactures to the oftentime imperfectly prepared remedies of the pharmacopœia.

* * * * *

And here let a word be said for that much abused class, the modern manufacturers of pharmaceutical specialties. The medical and pharmaceutical professions owe to them a great debt. It is their industry and their capital which have developed the perfection of the coated pill and the compressed tablet, the pancreatic ferment and the scale pepsin, the smooth and palatable cod liver oil emulsion and the perfected extracts of malt. To their energy do we owe the modern methods of treating disease with pre-digested and concentrated foods—a plan which has been the means of prolonging many valuable lives. They have spread the fame of American pharmacy over the entire globe, and established its supremacy against all competitors; therefore let them receive at least just recognition and honor for their labors.

THE SUMMER SESSION.—Tradition in medical schools disparages the summer session. The 1st of October is the student's New Year's Day. At once he begins his work in the dissecting room, and, with the exception of a few days' holiday at Christmas, his labors are continued till the end of March. The new requirements of the conjoint examining board will give greater importance to the summer session. The medical schools are shaping their arrangements in accordance with the new order. When the student enters in May, he will enjoy the advantage of getting used to hospital life, and will be able to spend part of his summer vacation in learning osteology. At the end of September he will know how to ensure a "part" in due season. It is, therefore, satisfactory to

learn that the warden of the College at St. Bartholomew's Hospital has issued a notice encouraging the entrance of freshmen in May. The notice advises a student who has passed a preliminary examination in arts early in the year (and has not commenced medical study) to enter in May, and to pursue his studies as follows:

1. In his first summer session to attend chemistry lectures and practical chemistry, with lectures on chemical physics. At the end of this session to pass the examination of the examining board in England of the Royal College of Physicians and Royal College of Surgeons in these subjects. He thus goes from his chemistry lecture to the practical study of the subject, and has the direct stimulus in his work of a public examination at the end of the session.
2. In his first winter session to attend anatomy lectures and dissect; to attend physiology lectures and practical physiology classes. At the end of his first winter session to pass the examination of the examining board in elementary anatomy and physiology.
3. In his second summer session to attend materia medica lectures and practical pharmacy. At the end of this summer session to pass the examination of the examining board in materia medica and pharmacy.
4. In his second winter session to dissect, and to study practical physiology, and to attend the advanced course of lectures on anatomy. He may with advantage also attend a second course of physiology lectures. At the end of his second winter session, to pass the second examination of the examining board in anatomy and physiology. Although systematic clinical work is necessarily deferred until after a student has passed his examinations in anatomy, physiology, and the other elementary subjects, he should from the beginning of his career, take every opportunity of learning the rudiments of practical medicine and surgery by attendance, as opportunities occur to him, in the wards, out-patient rooms, and the *post-mortem* room.

We understand that other medical schools intend to follow the example long ago set by University and King's Colleges, and more recently by St. Mary's, and to encourage the entry of new students in summer.—*The British Medical Journal*.

AN ENGLISH SANITARIUM IN BRAZIL.—Among health-resorts beyond Europe, where invalids and tourists may find sunshine and warmth, and a dry, bracing climate, along with home comforts, San Paulo, in Brazil, has already attracted attention, says the *British Medical Journal*, of March 31, 1888. From Rio to San Paulo is a railway ride of thirteen hours, but from the port of Santos it is only a three hours' run. Santos is twenty-eight days from New York. San Paulo has now only between 40,000 and 50,000 inhabitants, among whom are Brazilians, Portuguese, Germans, Italians, French, English, and Americans. The climate, both winter and summer, is delightful, and has been recommended for pulmonary invalids. The atmosphere is dry and exhilarating, and the barometric range so remarkably limited that it does not exceed .75 inch throughout the year. The average maximum temperature in the hottest month, January, is 80° Fahr. in the shade; in the coldest month, July, 72°. The average minimum night temperature in January is 64°; in July, 49°. The number of days on which there is brilliant sunshine for the whole or the greater part of the day averages 235 per annum, and such days are pretty equally distributed throughout the year. San Paulo has no unhealthy season of the year. Invalids are recommended to spend both seasons there, and it is uncertain which is most beneficial; but they that want sea-bathing and a change can go to Santos for bathing in June or July. Two miles from the city a sanitarium has been built, is well drained and supplied with excellent water. An English physician is resident in San Paulo, and is an able guide and adviser to those that go there for health.

RE-VACCINATION.

THE AGE FOR RE-VACCINATION.—The local government board has issued an order, dated February 3, 1888, amending former regulations as to the age at which re-vaccination may be furnished at the public expense. The new order provides that re-vaccination by a public vaccinator may be performed when the applicant has attained the age of twelve years (instead of fifteen years as heretofore), or in case of imminent danger from small-pox, at ten years (instead of twelve as heretofore), and has not before been successfully vaccinated.

The order further provides, with reference to children in public institutions, that the medical officer may re-vaccinate any one under ten years of age, whose primary vaccination he deems to have been inadequate, and who has not before been successfully re-vaccinated.

THE HYGIENIC SIGNIFICANCE OF RE-VACCINATION.—Dr. R. Gerstäcker, in a paper with the above title, gives some valuable data compiled from the reports of the Imperial Board of Health, and also from the report of the vaccination committee. From their tables it appears that the mortality from small-pox in Prussia, formerly differing but little from that of other countries, has fallen to a minimum under the operations of the vaccination law, so that small-pox may now be considered as having disappeared, except in some frontier districts, while Austria, with her defective regulations as to vaccination, and still more so as to re-vaccination, suffers severely from small-pox. Dr. Gerstäcker presents the following table as to the mortality from small-pox in London and in Berlin, with the comment that, while London enforces vaccination of the children, it has not enforced re-vaccination. He attributes the difference in the relative mortality from small-pox in the two cities to these facts.

DEATHS FROM SMALL-POX PER 100,000 INHABITANTS.

	1875	1876	1877	1878	1879	1880	1881	1882	1883
In London	1.3	20.8	71.0	38.8	12.1	12.5	61.9	11.1	3.4
In Berlin	5.2	1.8	0.4	0.8	0.7	0.8	4.7	0.4	0.3

The percentages in the following table, for a period of six years, also present further evidence of the advantages of re-vaccination.

BAVARIA.

	Cases of Small-Pox.		Unvaccinated.			Vaccinated.			Re-vaccinated.		
	Cases.	Deaths from Small-Pox.	Cases.	Deaths.	Percentage of Deaths.	Cases.	Deaths.	Percentage of Deaths.	Cases.	Deaths.	Percentage of Deaths.
1879	145	22	17	7	41.1	110	15	13.6	18	0	0.
1880	404	58	27	10	37.0	336	43	12.8	41	5	12.2
1881	559	78	56	27	48.2	466	48	10.3	37	3	8.1
1882	468	71	23	15	45.5	349	51	14.6	86	5	5.8
1883	247	34	11	5	45.4	198	29	14.6	88	0	0.
1884	63	8	4	2	50.0	51	5	9.8	8	1	12.5
Average					44.6			12.6			6.1

Boston Medical and Surgical Journal.

THE TOXIC PRINCIPLE OF EXPIRED AIR.—Drs. Brown-Séquard and d'Arsonval have presented a communication to the Academy of Sciences, intended to demonstrate the existence of a toxic principle in air expired from the lungs of men, or other animals. The facts hitherto known are the following:

(1) Expired air almost always, if not always, contains ammonia, but in a quantity insufficient to account for the injurious action of such air.

(2) Expired air contains a small quantity of organic matters, which, if they are not already decomposed on leaving the air-passages, yet have a marked tendency to rapid change.

(3) Confined air, charged with pulmonary exhalations, is not injurious, on account of the carbonic acid contained in it. Atmospheric air to which 1 per cent. of carbonic acid has been added causes but little inconvenience, while expired air containing no more carbonic acid is extremely noxious.

Experiments were conducted in which rabbits were treated with injections of water containing the toxic principle of pulmonary mucus.

The primary effects were dilation of the pupils; slowing of the respiration; paralysis, especially of the lower extremities; rapid diminution of temperature from half a degree to five degrees C.

In larger doses there were more pronounced symptoms: trembling and general convulsions; attitude *recroquevillée*; choleric diarrhoea, continuing till death ensued, in three or four hours after the injection.

The conclusions of the experimenters are that—

1. The lungs of men, of dogs, and of rabbits in health evolve an extremely energetic poison, which is continuously exhaled with the expired air.
2. It is probable, if not certain, that it is this poisonous agent which makes confined air injurious.

The true prevention of danger is found in efficient ventilation.—*Boston Medical and Surgical Journal*.

MEDICAL SCHOOLS AND STUDY IN THE UNITED STATES.—Professor EMILIO DE ROSSI, of the University of Rome, Italy, and an officer in the Ninth International Medical Congress, read a paper before the Royal Academy of Rome, on his return home from the congress, on "Medical Schools and Special Study in the United States." He speaks, not without some expressions of surprise, of the number of medical institutions in America, and makes special mention of some of the larger and older schools, printing in full the studies in the courses of two of the

oldest of the universities in this country. He was particularly surprised to find such great opportunities for special studies in medicine, in the many hospitals, clinics, and polyclinics of the country, referring more particularly to the advantages afforded to students of ophthalmology and otology, he himself being a distinguished otologist. He particularly praises one of the well-known institutions of New York for the study of ophthalmology and otology, and speaks of the great liberality in making the institution what it is. In concluding his paper he calls attention to the large number of the candidates for the doctorate that are graduated by the schools of the country, placing the percentage at 45, which is too high. In some of our schools, he says, the degree is granted too freely; our courses are too few, and too little attention is paid to general and scientific education preliminary to the study of medicine. He speaks well of the activity of the medical men of America, and the great interest that they take in medical matters of all kinds. He thinks that there should be at least one year of university study before the study of medicine is begun, and that the study of special subjects should be compulsory in our schools. As it is, he says, we have accomplished superb results with our methods of medical education.

An effort is being made in London to secure for foreigners residing in England the right to practice medicine in the United Kingdom.

In the House of Commons, April 9, 1888, Mr. Arnold Morley asked whether registered medical practitioners in the United Kingdom were afforded privileges of practicing in the United States of America, and whether any steps have been taken or were in contemplation by the privy council under section 17 of "The Medical Act, 1886," in the direction of similar privileges being given to legally qualified American practitioners who might be

desirous of practicing medicine in the United Kingdom.

"Sir W. Hart Dyke replied that no statement had been received from the Government of the United States showing the privileges afforded in America to registered medical practitioners of the United Kingdom, nor did he find that any request had been made by the United States Government for the extension of privileges to American medical men in this country,"

It was stated, in reply, that registered medical practitioners of the United Kingdom are afforded all rights and privileges of practicing medicine in the United States on equal terms with graduates of medical schools in the United States of America, and that the same courtesy is shown members of the other learned professions, holding certificates of their qualifications from the United Kingdom, that is shown to residents of the United States under the same circumstances.

SANITARY PLUMBING.—Medical officers of health have consistently and persistently supported the movement now on foot for the reform of plumbers' work. The medical officer of Liverpool (Dr. Taylor) has recently brought the subject prominently before the health committee of the city, and he is, we learn, now taking steps to obtain such support from the architects and plumbers of the locality as will secure the formation of a district council to carry out in Liverpool the examination and registration of plumbers on a national system inaugurated by the Worshipful Plumbers Company, London. The medical officer of Birkenhead (Dr. Vacher), who has evinced an active interest in the movement from the outset, read a paper on Defective Plumbing at the Royal Institution, Liverpool, on Monday, April 16, illustrating it by some of his own sketches of cases coming under his observation.—*The British Medical Journal*.

THE RESEARCH SCHOLARSHIP OF THE BRITISH MEDICAL ASSOCIATION.—Dr. Ralph Stockman has been appointed research scholar of the British Medical Association. Dr. Stockman is assistant to the professor of materia medica in the University of Edinburgh, and received a special training in the modern methods of pharmacological and physiological research in the laboratories of Professors Schiemedeborg and Hoppe-Seyler. He proposes to continue or undertake researches on the following subjects: 1. The chemical changes which menthol, camphor, and similar bodies undergo after absorption; how far these metabolic products affect the organism, and whether they still act as antiseptics. 2. The exact mode of action of the camphor group on the heart and circulation. 3. The pharmacology of a new body which acts like digitalis. 4. The problems connected with the absorption and excretion of glycerine and of fats. 5. On the connection between chemical constitution and physiological action of some alcohols.—*The British Medical Journal*.

THE WOMAN'S MEDICAL COLLEGE held its commencement exercises on April 3. The following is the list of graduates:

Annie Emilie Barlow	Mary Jeanette Kearsley
Emma Earle Chenault	Lelia Latta
Marie M. Côté, M. E. L.	Anna M. Lemon
Agnes Eichelberger	Ella M. Minnick
Izillah Ernsberger	Eliza Roxana Morse
Helen Charlotte Gilman	Louise Sedgwick
Harriette Amanda Howe	Mary Belle Tuttle
Jennie E. Jones	Harriette Florella Wolfe

HOSPITAL APPOINTMENTS.—*Mercy Hospital*.—W. D. Storer, W. S. Hall, H. B. Carriel.

St. Luke's Hospital.—L. L. Gregory, T. B. Swartz, E. J. Schwandt, J. S. Perekhan.

Michael Reese Hospital.—C. B. Wagner.

Cook County Hospital.—J. B. Herrick, E. J. Brown, H. R. Wittwer, F. J. Hodges, C. W. Burson, M. J. Kersley, T. J. Haines, —Lewis.

LASSAR'S OINTMENT FOR SCABIES.—LASSAR claims good results from the use of the following ointment in scabies :

Naphthol, grammes, 5 to 10.

Green soap,

Precipitated chalk,

Washed sulphur,

Lanolin aa, grammes, 25.

Journal Cutaneous and Genito-Urinary Diseases, February, 1888.

THE CHICAGO GARBAGE CREMATORY continues to work well. It seems fully to meet the anticipations of the Health Department of Chicago, and promises to afford the city relief, that was much needed, from the annoyance of garbage that, prior to its erection, had never been satisfactorily disposed of here. Should it, upon further trial, continue to work as well, it is contemplated to erect additional ones for other sections of the city.

LAILLER'S WASH FOR PALPEBRAL ECZEMA.—LAILLER recommends the following wash for cases of palpebral eczema :

Crystallized acetic acid.....2 parts

Glycerine.....50 "

Cherry-laurel water (distilled)200 "

To be painted on the eyelid once a day. The brush should be slightly resistant, and care should be taken in applying the mixture.—*Riforma Medica*, March 22, 1888.

IMPURE ANTIPYRIN.—Professor DUJARDIN-BEAUMETZ calls attention to the fact that in some cases due care is not exercised in the preparation of this drug, a certain proportion of benzine having been detected in some samples that were analyzed. He thinks that this impurity may account for some of the toxic symptoms that have been reported as occurring, after the use of antipyrin, such as eruptions, gastric troubles, and grave cerebral symptoms.

ARSENIC SUBCUTANEOUSLY IN CHOREA.

—Make a mixture of equal parts of Fowler's solution and distilled water. Begin by injecting one drop into the subcutaneous cellular tissue, and increase the quantity by one drop a day until eight or ten drops are being injected, when the quantity is reduced one drop a day. If necessary repeat.—*Gazette Médicale de Montreal*, January, 1888.

THE POLYCLINIC IN ROME.—In February the corner-stone of the new Polyclinic to be built in Rome was laid with impressive ceremonies, including an oration by Professor Bacelli. The building will have an area of more than 160,000 square yards, and when finished will be the most thoroughly equipped building of the kind in the world.

POLYPUS OF THE TONSIL.—LUBLINSKI reports a rare case of polypus of the tonsil, which he found on the lower segment of the left tonsil of a patient. It was about 3.2 cm. long, and from 3 to 5 cm. broad, with its base on the back of the tongue. It was removed by means of the scissors.—*Centralbl. für Chirurgie*, No. 8, 1888.

THE GABRIELE BELLION PRIZE of the Académie des Sciences de Paris, will be awarded annually to the one writing the best work on, or making the most useful discovery in, human sanitation or for the advancement of the human race.

Dr. LEOPOLD VON HOLST, for many years one of the editors of the *St. Petersburger Medicinische Wochenschrift*, and one of the leaders of the medical profession in Russia, died recently of pyæmia.

SMALL-POX IN HAVANA.—During the month of January, 1888, 274 persons died of small-pox in Havana, which was a decrease of 98 as compared with December, 1887.

PROFESSOR KÜSTNER has been called to the University of Dorpat, to take the place of Dr. Wyder, who has taken Runge's former chair in Halle.

DR. HEBRA says: The only active treatment of dermatitis papillaris consists in destruction of the diseased tissue, which is best done with Paquelin thermo-cautery.

THE EMPEROR WILLIAM, of Germany, died of renal colic, according to the *British Medical Journal*. He had been subject to attacks of this malady for several years.

REVUE MÉDICALE PHARMACEUTIQUE is a new journal edited by Dr. Apery, of Constantinople, and published in the French, Turkish, and Greek languages.

DR. B. FISCHER, who accompanied Dr. Koch to Egypt and India, has been appointed Privatdocent for Bacteriology in the University of Kiel.

THE UNIVERSITY OF BOLOGNA, Italy, the oldest in Europe, will celebrate its 800th anniversary on June 12.

A SANITARY convention will be held at Manistee, Mich., under the auspices of the State Board of Health, on Tuesday and Wednesday, June 6 and 7, 1888.

It has recently been proposed to substitute the Greek letter Delta (Δ) for the present dram sign (\mathfrak{d}) in prescription-writing.

OBITUARY.

THE DEATH OF PROFESSOR CORNELIUS REA AGNEW.—In the death of Professor Agnew, not alone New York, but the whole medical profession, has sustained a great loss. He was esteemed at home and

abroad as a representative medical man. A contemporary truly says of him, he was "beloved by all who knew him, esteemed wherever his name was known, uniting, as few physicians have done, so much learning with so many noble and generous traits of character, so much modesty with such self-sacrifice in the hour of duty, and has left vacant the place in the profession that he has so long honored. Whether in his home, among his patients, in the lecture room, before his colleagues, or in the service of his country, he was the same calm, dignified, learned, charming, Christian gentleman."

THE DEATH OF DR. E. G. LORING.—In the death of Dr. E. G. Loring New York has sustained the loss of another of her most prominent ophthalmologists. He was at one time a partner of Professor C. R. Agnew, and died suddenly of heart disease, just one week after the death of Professor Agnew.

ANNOUNCEMENTS.

ILLINOIS STATE MEDICAL SOCIETY.

The thirty-eighth annual meeting will be held in Rock Island, in the Opera House, beginning on Tuesday, May 15, 1888, at 10 o'clock, a. m.

OFFICERS OF THE SOCIETY.—President: William Oren Ensign, Rutland. First Vice-President: Charles Warrington Earle, Chicago. Second Vice-President: Phillip H. Oyler, Mt. Pulaski. Permanent Secretary: David W. Graham, Chicago. Assistant Secretary: George L. Eyster, Rock Island. Treasurer: Walter Hay, Chicago.

JUDICIAL COUNCIL.—Ephraim Ingals, Chicago; Francis B. Haller, Vandalia; William Hill, Bloomington; whose term expires 1888. Charles C. Hunt, Dixon; A. T. Barnes, Bloomington; L. G. Thompson,

Lacon; whose term expires 1889. Alphonzo Wetmore, Waterloo; Samuel G. Plummer, Rock Island; Benjamin F. Crummer, Warren; whose term expires 1890.

STANDING COMMITTEES.—Practice of Medicine: Frank Billings, Chicago; G. W. Nesbitt, Sycamore; Adelbert H. Tagert, Chicago. Surgery: W. S. Caldwell, Freeport; Benjamin F. Crummer, Warren; Samuel K. Crawford, Chicago. Obstetrics: Geo. Wheeler Jones, Danville; Charles C. Hunt, Dixon; Catherine Slater, Aurora. Gynecology: A. Reeves Jackson, Chicago; T. M. Cullimore, Jacksonville; Mary E. Bates, Chicago. Drugs and Medicines: D. S. Booth, Sparta; A. J. C. Saunier, Libertyville; John A. Robison, Chicago. Ophthalmology and Otology: Edward L. Holmes, Seth S. Bishop, Chicago; C. A. Palmer, Princeton. Necrology: Ephraim Ingals, Chicago; John H. Rauch, Springfield; Otho B. Will, Peoria. Publication: David W. Graham, Walter Hay, Chicago; George L. Eyster, Rock Island. Committee of Arrangements: G. Truesdale, Thomas Galt, C. Bernhardt, G. G. Craig, S. C. Plummer, C. C. Carter, Geo. E. Barth, P. Gregg, G. L. Eyster (ex-officio), Rock Island.

SPECIAL COMMITTEES.—Diseases of Children: A. E. Goodwin, Rockford; Mary H. Thompson, Chicago; Washington West, Belleville. Antiseptic Obstetrics: Chas. W. Earle, Chicago. Intubation of Larynx: Frank E. Waxham, Chicago. The Present Status of Bacteriology in its Relation to Disease: Romaine J. Curtis, Joliet; Frank S. Johnson, Chicago. Pelvic Surgery: Wm. S. Chenoweth, Decatur; Sarah H. Stevenson, Chicago. Venereal Disease: Harold N. Moyer, Isaac N. Danforth, J. J. M. Angear, Chicago. Hypnotics: Daniel R. Brower, Chicago. Compound Fractures: D. A. K. Steele, Chicago. Hernia: David W. Graham, Chicago. Some Topic on Gynecology: Marie J. Mergler, Chicago. Physiology: Alphonzo Wetmore, Waterloo. Dermatology: Henry J. Reynolds, Chicago. Neurology: Horace Wardner,

Anna; J. L. Gray, Chicago. The Exigencies and Excitements During the First Labor: James S. Whitmire, Metamora. Legislation for the Insane: Walter Hay, Chicago; Edgar P. Cook, Mendota; Francis B. Haller, Vandalia. Medical and Sanitary Legislation: B. M. Griffith, Springfield; W. A. Haskell, Alton; John L. White, Bloomington; Albert B. Strong, Chicago. Influence of Appreciable Meteorological and Topographical Conditions on the Prevalence of Acute Diseases: Nathan S. Davis, John H. Hollister, James F. Todd, Chicago; Edgar P. Cook, Mendota; George W. Jones, Danville. Biographical: John H. Hollister, Ephraim Ingals, Chicago; Charles C. Hunt, Dixon; Francis B. Haller, Vandalia; A. M. Powell, Collinsville; Edgar P. Cook, Mendota; John S. Williams, Otterville; George W. Jones, Danville; Thomas F. Worrell, Bloomington; Robert Boal, Peoria; Hugh R. Guthrie, Sparta. Improvement of State and Local Medical Organization, and on Revision of the Constitution: Edgar P. Cook, Mendota; Thomas M. McIlvaine, Peoria; A. E. Goodwin, Rockford. Appointment of Delegates to the American Medical Association for 1888: Charles W. Earle, David W. Graham, Chicago; Geo. W. Jones, Danville.

The committee of arrangements has secured reduction of railroad fare for members and delegates on the conditions specified in circular.

The constitution of the society requires all members and delegates to register and present their credentials before participating in any business of the meeting.

Registration will begin at 9 o'clock a. m., on Tuesday, at the hall. It is desired that as many as can do so will register before the society is called to order.

D. W. GRAHAM,

Permanent Sec'y, 133 Clark St., Chicago.

NOTICE.—Members who wish to go to the meeting of the American Medical

Association, in Cincinnati, May 8, 1888, as delegates from this society, should send their names to the secretary at once.

C. W. EARLE,
D. W. GRAHAM,
G. W. JONES,
Committee.

PRELIMINARY PROGRAMME OF THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS—At the meeting to be held in Washington, September 18, 19, and 20, 1888.

1. Clinical Observations on Diseases of Testicle. By Dr. L. B. Bangs, of New York City, New York.
2. Clinical Observations on Chronic Gonorrhœa, and
3. Two Cases of Cancer of the Seminal Vesicles, with Pathological Specimens. By Dr. J. P. Bryson, of St. Louis, Mo.
4. Operative Treatment of Hypertrophy of the Prostate, and
5. Case of Bowel ending in the Urethra of a child four weeks old; Relief by Operation. By Dr. A. T. Cabot, of Boston, Mass.
6. On the Effects of Rapid Changes of Altitude in an advanced Case of Interstitial Nephritis. By Dr. George Chismore, of San Francisco, Cal.
7. Connection between Masturbation and Stricture. By Dr. S. W. Gross, of Philadelphia, Pa.
8. Operations on the Kidney. By Dr. W. H. Hingston, of Montreal, Canada.
9. Syphiloma of the Vulva. By Dr. J. N. Hyde, of Chicago, Ill.
10. The Curability of Urethral Stricture by Electricity; an Investigation, and
11. The Comparative Value of Supra Pubic and Perineal Drainage in Curable and Incurable Bladder Disease. By Dr. E. L. Keyes, of New York City, N. Y.
12. The *Filaria Sanguinis Hominis*, in the United States, Especially in its Relationship to Chylocele of the Tunica Vaginalis Testis. By Dr. W. M. Mastin, of Mobile, Ala.
13. A case of Perineal Section for Traumatic Retention; Unusual Condition of the Bladder. By Dr. J. E. Michael, of Baltimore, Md.
14. The Prophylaxis of Syphilis. By Dr. P. A. Morrow, of New York City, N. Y.
15. Unusual Case of Urethral Calculus. By Dr. H. G. Mudd, of St. Louis, Mo.
16. On the Radical Cure of Stricture by Dilating Urethrotomy, and
17. Demonstration of a Perfected Evacuator and an Improvement in the Method of Removal of Débris from the Bladder. By Dr. F. N. Otis, of New York City, N. Y.
18. Pyæmia as a Direct Sequel of Gonorrhœa. By Dr. R. Park, of Buffalo, N. Y.
19. Retrojections in Gonorrhœa. By Dr. E. R. Palmer, of Louisville, Ky.
20. Prostatotomy for Enlarged Prostate at the age of Forty-two. By Dr. Abner Post, of Boston, Mass.
21. A case of Removal of both Testicles for Recurrent Carcinoma, and
22. A Case of Nephrolithiasis Complicated with Hydronephrosis, in which Lumbar Nephrotomy was Performed. By Dr. F. W. Rockwell, of Brooklyn, N. Y.
23. Some Points on the Differential Diagnosis of Bladder and Kidney Affections, with Demonstrations of the Cystoscope and Other Instruments, and
24. On the Physiology of the Bladder. By Dr. Alexander W. Stein, of New York City, N. Y.
25. Local Treatment of Chronic Urethral Discharges. By Dr. F. R. Sturgis, of New York City, N. Y.
26. Some Points on the Etiology of Stricture of the Urethra. By Dr. R. W. Taylor, of New York City, N. Y.
27. Operative Treatment of Hypertrophy of the Prostate, and
28. Spontaneous Fracture of Stone in the Bladder. By Dr. F. S. Watson, of Boston, Mass.
29. The Relation of the Prostate to Chronic Urethral Discharges, and

The Value of the Tolerance of the Iodides as a Diagnostic of Syphilis, and

30. Urethral Stricture and Enlarged Prostate in their Relation to Vesical Calculus and Calculus Pyelitis, with cases. By Dr. J. William White, of Philadelphia, Pa.

BY INVITED GUESTS.

31. The Prognosis of Stricture, based on thirty years' death record of Stricture at the London Hospital and the practice at St. Peter's Hospital. By Dr. E. Hurry Fenwick, of London, England.

32. The Congenital Anomalies of the External Urethral Orifice. By Dr. C. Kaufmann, Zurich, Switzerland.

R. W. TAYLOR, *Secretary*.

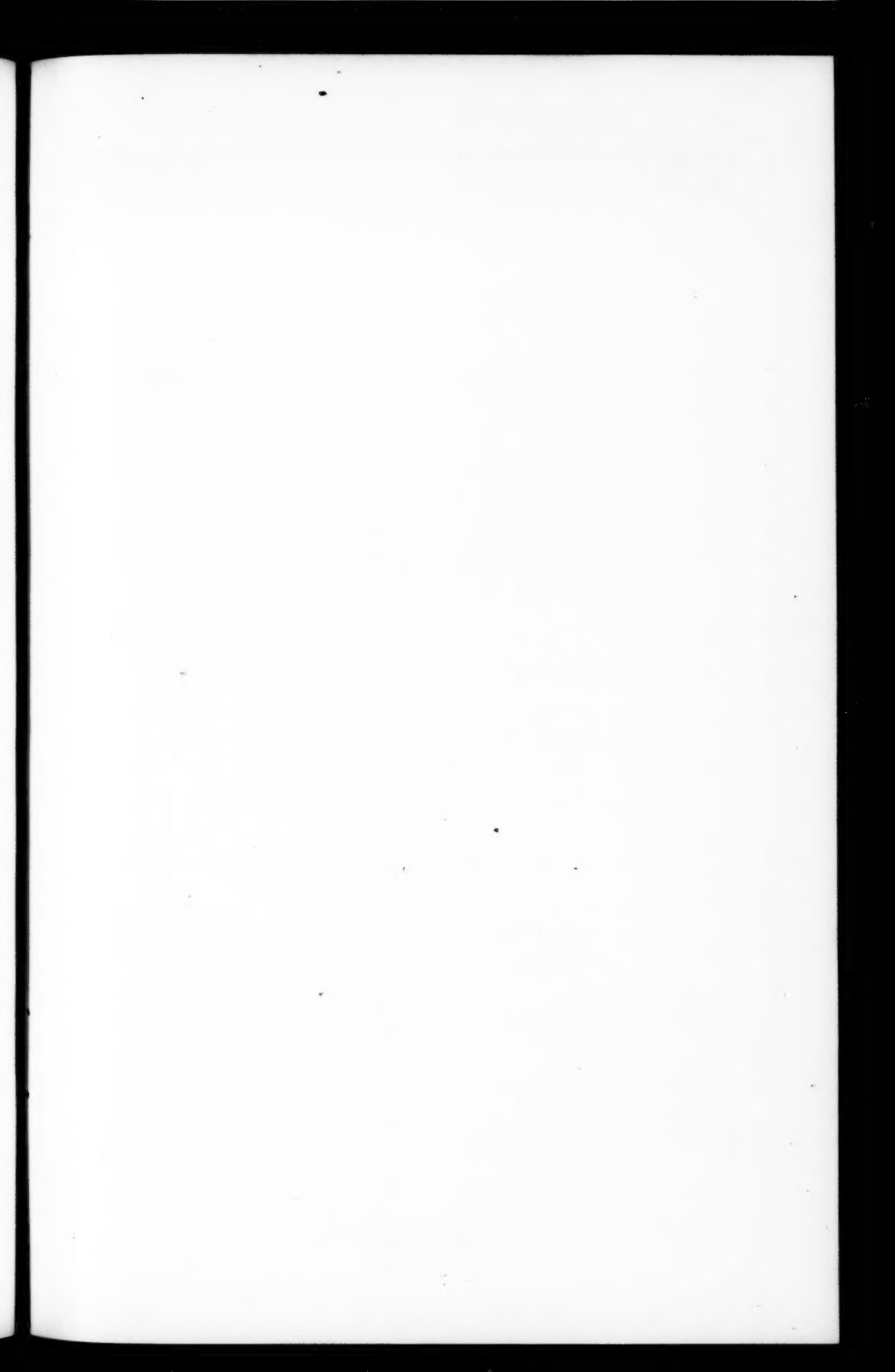
A STATE SANITARY CONVENTION, under the auspices of *The State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania*, will be held at Lewisburg, Penn., on the 17th and 18th days of May.

The Thirty-ninth Annual Meeting of *The American Medical Association* will be held in Cincinnati on Tuesday, May 8, and close on Friday, May 11.

The indications are that the meeting will be a very interesting one.

It is officially announced that the railroads will sell to physicians, and members of their families attending the meeting with them, round-trip tickets for one fare and one-third, as has been customary heretofore.

SUBSCRIPTIONS FOR THE RUSH MONUMENT FUND.—Dr. S. J. JONES, Argyle Building, Chicago, is the representative, for the State of Illinois, on the Committee of the American Medical Association, to solicit contributions towards the erection of a monument in honor of Dr. Rush. Donations of any amount may be sent to Dr. Jones, at the above address, or to Dr. G. H. Rohe, secretary, Baltimore, Md., or to J. M. Toner, Treasurer, Washington, D. C.





C. R. Agnew

PROFESSOR C. R. AGNEW, M. D.